R C Patel Institute of Technology

SELF ASSESSMENT REPORT(TIER - I) FOR Electronics and Telecommunication 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 (DBATU) Vidyavihar, Lonere, Tal- Mangaon, Dist – Raigad, Maharas
(https://www.bing.com/ck/a?!&&p=3f00d7ef512ebc78ba99dc1d6b416ad229f4fc989f08ceb19ede4e628782530cJmltdHM9MTc3MzM2MDAwMA&ptn=3&ver=2&hsh=4&fclid=070dc1be
d4b6bcc46691&psq=dbatu+address&u=a1aHR0cHM6Ly93d3cuY2FyZWVyczM2MC5jb20vdW5pdmVyc2l0eS9kci1iYWJhc2FoZWItYW1iZWRrYXItdGVjaG5vbG9naWNhbC11bml2ZX

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. Patil 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	Prog
Electronics Telecommunication Engineering	UG	2001	2015	60	Yes	120	Applying first time	--	--		4

Sanctioned Intake for Last Five Years for the Electronics Telecommunication Engineering

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

8 Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Computer Engineering
2	Under Graduate	Engineering & Technology	Mechanical Engineering
3	Under Graduate	Engineering & Technology	Electronics and Telecommunication Engineering

Table No. A8.2

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

9 Total Number of Faculty Members in Various Departments:

ID	Deparment Name	Number of faculty members in the Department (UG and PG)											
		2025-26 (CAY)				2024-25 (CAYm1)				2023-24 (CAYm2)			
		No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members	No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members	No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members
1	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	90.30
5	FACULTY INFORMATION	100	82.30
6	FACULTY CONTRIBUTIONS	120	100.00
7	FACILITIES AND TECHNICAL SUPPORT	100	100.00
8	CONTINUOUS IMPROVEMENT	80	80.00
9	STUDENT SUPPORT AND GOVERNANCE	120	116.00
	Total	**1000**	**928**

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 produce competent Electronics and Telecommunication Engineers with a commitment to serve society.
Mission of the Department	

Mission No.	Mission Statements
M1	Deliver innovative, ICT-enabled, and interactive learning, fostering excellence in electronics and telecommunication engineering
M2	Cultivate scientific inquiry, ethical responsibility, and collaboration to address societal and technological challenges effectively
M3	Empower diverse students with skills for employment, entrepreneurship, and research, nurturing professionalism and lifelong learning

1.1.2 State PEOs of the Program (5)

Institute Marks : 5.00

PEO No.	Program Educational Objectives Statements
PEO1	Graduates will apply engineering knowledge and innovation to solve complex problems in Electronics and Telecommunication domains
PEO2	Graduates will demonstrate ethical and social values while adapting to technological advancements for sustainable societal progress
PEO3	Graduates will pursue careers through employment, entrepreneurship, or research, embracing professionalism and continuous learning throughout life

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 Program Educational Objectives (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 Vision, Mission, and PEOs. These ensure consistency with the long term strategic direction of the institute.

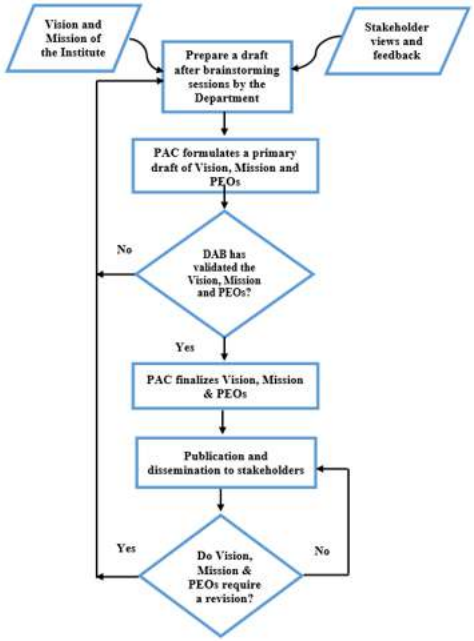

Figure 1.1.3.1: Process of defining the program Vision, Mission and PEOs

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 Level 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.

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

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 and Placement (T&P) Activity Report	Internal and External Stakeholders
	• Student Files and Reports • Laboratory Manuals	Internal Stakeholders
Methods of Display	• Director's 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, Mission and PEOs of the Department		**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

Publication of Vision, Mission and PEOs of the Department		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:

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 engineering knowledge and innovation to solve complex problems in Electronics and Telecommunication domains	3	2	2
Graduates will demonstrate ethical and social values while adapting to technological advancements for sustainable societal progress	3	3	3
Graduates will pursue careers through employment, entrepreneurship, or research, embracing professionalism and continuous learning throughout life	3	3	3

Mapping of PEOs with the department mission statements:

M1, M2 and M3 are distinct elements of the Mission statement. Correlation levels 1, 2 or 3 as defined as: 1: Slight (Low) 2: Moderate (Medium) 3: Significant (High).

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.

Note: M1, M2. . . Mn are distinct elements of mission statement. Enter correlation levels as Low (1), Medium (2) and High (3). If there is no correlation, put "-".

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:** Deliver innovative, ICT enabled, and interactive learning, fostering excellence in electronics and telecommunication engineering.	**M2:** Cultivate scientific inquiry, ethical responsibility, and collaboration to address societal and technological challenges effectively.	**M3:** Empower diverse students with skills for employment, entrepreneurship, and research, nurturing professionalism and lifelong learning.

PEO1 Graduates will apply engineering knowledge and innovation to solve complex problems in Electronics and Telecommunication domains	**3-High:** The department fosters innovative and interactive learning through initiatives such as Virtual Labs (IIT Bombay), Digital Library access, NPTEL courses, and various online platforms and certifications. These opportunities enable students to strengthen technical knowledge and practical skills, empowering them to apply E&TC engineering concepts and innovative solutions to complex industrial and societal challenges, thereby directly supporting PEO1.	**2-Medium:** Activities such as placement-oriented coding courses, technical bootcamps, hackathons, skill development programs, and expert lectures by Alumni enhance problem-solving and practical skills. These directly support PEO1 by preparing professionally competent engineers to meet industry needs and address complex challenges.	**2-Medium:** Employability programs such as the Mahindra Pride Classroom, Barclays Soft Skill Training, Infosys Springboard Technology Training Program, Symbiosis FSD, Infosys Foundation Ethnus Training Program, GTT Foundation Softskill/Aptitude Training Program, and R3 Sys Training enhance communication, teamwork, and career readiness. These initiatives indirectly support PEO1 by enabling graduates to apply technical knowledge effectively in professional practice.
PEO2 Graduates will demonstrate ethical and social values while adapting to technological advancements for sustainable societal progress	**3-High:** ICT enabled learning under M1 gives students access to global online resources like MOOCs (SWAYAM, NPTEL), digital libraries, and certifications, exposing them to diverse technical practices and multicultural perspectives. This fosters ethical understanding, cultural sensitivity, and lifelong learning, enabling graduates to adapt technology responsibly for sustainable societal development.	**3-High:** Initiatives like foreign language courses, Smart India Hackathon, Professor of Practice by alumni and industry-linked projects expose students to diverse cultural and professional environments, promoting ethical responsibility, teamwork, and interdisciplinary collaboration. These experiences align with PEO2 by nurturing ethical leadership and the ability to adapt technology responsibly for societal progress.	**3-High:** Promoting strong ethical values through entrepreneurship activities facilitated by the IIC Cell enhances graduates' ability to act responsibly and ethically across diverse socio-economic contexts. These initiatives foster interdisciplinary collaboration and ethical leadership, directly contributing to the objectives of PEO2.

PEO3 Graduates will pursue careers through employment, entrepreneurship, or research, embracing professionalism and continuous learning throughout life.	**3-High:** The department focuses on delivering innovative and ICT enabled learning that integrates ethical values into the curriculum. This approach, reinforced through evaluation rubrics and course design, fosters professionalism, ethical awareness, and lifelong learning among students, thereby supporting the objectives of PEO3.	**3-High:** Students actively engage in social and environmental responsibility through initiatives such as the Grain Donation program, Free Book Distribution, Sanitary Pad Distribution, Blood Donation camps, NSS Nirmalya Collection, Tree Plantation drives, and events like Kargil Vijay Diwas, which include the felicitation of Ex-Army personnel. These activities provide practical experience in serving society while fostering ethical awareness, collaborative skills, and a strong sense of professional responsibility, aligning with the objectives of PEO3.	**3-High:** Students are encouraged to develop strong ethical values and social responsibility through practical activities such as the celebration of Constitution Day, NSS camps, and Samarpan Club initiatives. These experiences complement professional skill development, fostering ethical grounding and social commitment, and ensuring graduates are well-prepared to pursue careers in employment, entrepreneurship, or research in line with the objectives of PEO3.

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, POs and PSOs, 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 (PAC):

- 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 (DAB):

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

Board of Studies (BoS):

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

Academic Council:

- Academic Council is responsible for final ratification 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.

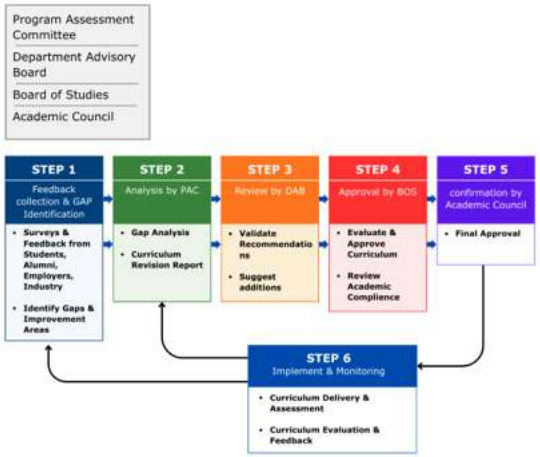

Figure 1.2.1.1: Process for Developing/Revising the Program Curriculum

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 practical	Basic Electrical Electronics Engineering Laboratory	PO1, PO2, PO5, PSO1	Skill Gap	Industrial Approach in Electrical & Electronics workshop	Workshop Conducted
2	Alumni Interaction	Need IoT based hands-on experience	Microcontroller Lab	PO3, PO4, PSO1	Knowledge	Need IoT based hands-on experience	Microcontroller Lab
3	Exit Survey	Limited team collaboration experience	All project courses	PO9	Attitude/Soft Skill Gap	Interdisciplinary Project Introduction	Implemented in 2024
4	Industry Expert Talk	Absence of structured Machine Learning fundamentals	Elective Basket	PO2, PSO1	Knowledge Gap	Added in NEP syllabus	Machine Learning and Applications Syllabus added
5	Employer Feedback	Weak Communication & Presentation skills	Seminar, Project	PO10	Soft Skills Gap	TA activity Upgraded	Mock Interview+ GD introduced
6	Academic Result Analysis	Students faced difficulty in understanding core concepts of Electromagnetic Engineering	Electromagnetic Engineering	PO1	Knowledge Gap	Remedial classes conducted to strengthen fundamental concepts	Remedial completed

7	Comparing with IITs	Students required enhanced understanding of legal, administrative, and economic aspects of electricity supply beyond classroom teaching	Power System Transmission and Distribution	PO1, PO2, PO8, PO12, PSO1	Knowledge & Exposure Gap	Organized expert lectures and arranged industrial visits to substations and power plants to provide practical exposure	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	56	14	0	80	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	42	14	0	64	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	02	30	1.00
7	C107	Engineering Mechanics Laboratory	0	0	28	02	30	1.00
8	C108	Basic Electrical Electronics Engineering Laboratory	0	0	28	02	30	1.00
9	C109	Language Proficiency- English	0	0	28	02	30	1.00
10	C110	Engineering Mathematics-II	56	14	0	80	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 Skill	28	0	0	32	60	2.00
16	C116	Engineering Science -II Laboratory	0	0	28	02	30	1.00
17	C117	Engineering Graphics Laboratory	0	0	28	02	30	1.00
18	C118	Computer Programming Laboratory	0	0	28	02	30	1.00
19	C119	Effective Communication Skills Laboratory	0	0	28	02	30	1.00
20	C120	Workshop	0	0	28	02	30	1.00

21	C201	Engineering Mathematics-III	56	14	0	50	120	4.00
22	C202	Analog Circuit Design	42	0	0	48	90	3.00
23	C203	Analog Circuit Design - Laboratory	0	0	28	02	30	1.00
24	C204	Digital System Design	42	0	0	48	90	3.00
25	C205	Digital System Design - Laboratory	0	0	28	02	30	1.00
26	C206	Electrical Network Analysis and Synthesis	42	0	0	48	90	3.00
27	C207	Electrical Network Analysis and Synthesis Laboratory	0	0	28	02	30	1.00
28	C208	Signals & Systems	42	0	0	48	90	3.00
29	C209	Signals & Systems Laboratory	0	0	28	02	30	1.00
30	C210	Object Oriented Programming Laboratory	0	0	28	32	60	2.00
31	C211	Semester Project- I	0	0	28	02	30	1.00
32	C212	Engineering Mathematics - IV	56	14	0	50	120	4.00
33	C213	Analog Communication	42	0	0	48	90	3.00
34	C214	Analog Communication Laboratory	0	0	28	02	30	1.00
35	C215	Integrated Circuits	42	0	0	48	90	3.00
36	C216	Integrated Circuits Laboratory	0	0	28	02	30	1.00
37	C217	Electromagnetic Wave Propagation	42	0	0	78	120	4.00
38	C218	Python Programming Laboratory	0	0	28	02	30	1.00
39	C219	Universal Human values	28	0	0	32	60	2.00
40	C220	Semester Project- II	0	0	28	02	30	1.00
41	C221	Employability Skill Development Program - I	0	0	28	02	30	1.00
42	C301	Microprocessor & Microcontroller	42	0	0	48	90	3.00
43	C302	Microprocessor & Microcontroller Laboratory	0	0	28	02	30	1.00
44	C303	Digital Signal Processing	42	0	0	48	90	3.00

45	C304	Digital Signal Processing Laboratory	0	0	28	02	30	1.00
46	C305	Radio Frequency Circuit Design	42	0	0	48	90	3.00
47	C306	Radio Frequency Circuit Design Laboratory	0	0	28	02	30	1.00
48	C307	Professional & Business Communication	28	0	0	32	60	2.00
49	C308	Data Structures & Algorithms	28	0	0	32	60	2.00
50	C309	Data Structures & Algorithms Laboratory	0	0	28	02	30	1.00
51	C310	Database Management System Laboratory	0	0	28	02	30	1.00
52	C311	Semester Project- III	0	0	28	02	30	1.00
53	C312	Employability Skill Development Program - II	0	0	28	02	30	1.00
54	C313	Operating Systems	42	0	0	48	90	3.00
55	C314	Operating Systems Laboratory	0	0	28	02	30	1.00
56	C315	Digital Communication	42	0	0	48	90	3.00
57	C316	Digital Communication Laboratory	0	0	28	02	30	1.00
58	C317	Radiating Systems	42	0	0	48	90	3.00
59	C318	Radiating Systems Laboratory	0	0	28	02	30	1.00
60	C319	Fundamentals of Digital Image Processing	42	0	0	48	90	3.00
61	C320	Fundamentals of Digital Image Processing Laboratory	0	0	28	02	30	1.00
62	C321	Computer Networks	42	0	0	48	90	3.00
63	C322	Computer Networks Laboratory	0	0	28	02	30	1.00
64	C323	Microcontroller & Applications Laboratory	0	0	28	32	60	2.00
65	C324	Project Stage-I	0	0	56	04	60	2.00
66	C325	Artificial Intelligence & Machine Learning	42	0	0	48	90	3.00
67	C326	Artificial Intelligence & Machine Learning Laboratory	0	0	28	02	30	1.00

68	C401	Mobile Communication System	42	0	0	48	90	3.00
69	C402	Mobile Communication System Laboratory	0	0	28	02	30	1.00
70	C403	Microwave Engineering	42	0	0	48	90	3.00
71	C404	Microwave Engineering Laboratory	0	0	28	02	30	1.00
72	C405	Embedded Systems	42	0	0	48	90	3.00
73	C406	Embedded Systems Laboratory	0	0	28	02	30	1.00
74	C407	IoT and Sensor Network Laboratory	0	0	28	02	30	1.00
75	C408	Industrial Automation Laboratory	0	0	28	02	30	1.00
76	C409	Project Stage - II	0	0	112	08	120	4.00
77	C410	Research Methodology	42	0	0	48	90	3.00
78	C411	Wireless Network	42	0	0	48	90	3.00
79	C412	Optical Communication	42	0	0	48	90	3.00
80	C413	Introduction to Internet of Things	0	0	0	0	0	0.00
81	C414	Optical Wireless Communications for Beyond 5G Networks and IoT	0	0	0	0	0	0.00
82	C415	Internship	0	0	280	20	300	10.00
		Total	**1526**	**70**	**1540**	**1964**	**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	10.59	540.00	18.00
Humanities and Social Scie	5.88	300.00	10.00
Program Core	43.53	2220.00	74.00
Program Electives	10.59	540.00	18.00
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)	00	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
- Cocurricular 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 GR Link: Click Here (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 (ABC)

- 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.

APAAR (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, live projects, 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.

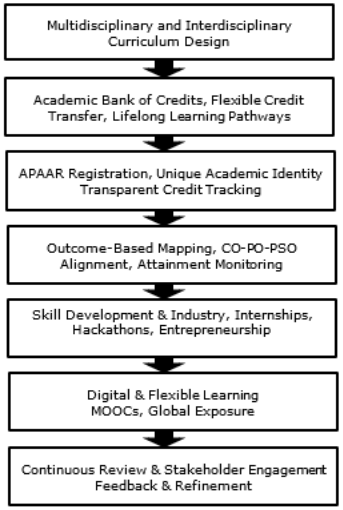


Figure 1.2.4.1 - Strategies for Education Reforms

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
Indian Knowledge System	Humanities and Social Science	In 1st and 2nd Semester
Health and Wellness-Mind and Body Management	Liberal Learning	In 1st Semester
Community Engagement Service	Experiential Learning	In 3rd Semester
Data Structures and Algorithms	Multidisciplinary	In 4th Semester
Database Management System	Multidisciplinary	In 5th Semester
Machine Learning and Applications	Multidisciplinary	In 6th Semester

Economics and Financial Management	Humanities and Social Science	In 3rd Semester
Design Thinking laboratory	Humanities and Social Science	In 4th Semester
Semester Project-I, II, III	Skill Enhancement Course	In 3rd Semester to 5th Semester
Internship	Skill development, Experiential learning, and Industry Exposure.	In 8th Semester

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

1.3.1 POs and PSOs (5) :

PSO1	Engineering Fundamentals & Problem Solving: Apply core principles of Electronics and Telecommunication engineering, including devices, circuits, signal processing, communication systems, and embedded platforms, to analyze and solve real-world engineering problems
PSO2	Digital, Software & Embedded Competency: Design, simulate, and implement Electronics and Telecommunication solutions using modern software tools, programming environments, and embedded platforms for industry-relevant applications

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, C116, C117, C118, C120, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C215, C216, C217, C218, C220, C221, C301, C302, C303, C304, C305, C306, C308, C309, C310, C311, C312, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413, C414, C415
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, C212, C213, C214, C215, C216, C217, C218, C220, C221, C301, C302, C303, C304, C305, C306, C308, C309, C310, C311, C312, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413, C414, C415
PO3	C103, C104, C105, C106, C107, C108, C110, C111, C112, C113, C114, C116, C117, C118, C120, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C215, C216, C217, C218, C220, C221, C301, C302, C303, C304, C305, C306, C308, C309, C310, C311, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C413, C414, C415
PO4	C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C215, C216, C217, C218, C220, C221, C301, C302, C303, C304, C305, C306, C308, C309, C310, C311, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413, C414, C415
PO5	C101, C104, C107, C110, C113, C114, C115, C117, C118, C119, C120, C204, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C215, C216, C217, C218, C220, C221, C301, C302, C303, C304, C305, C306, C307, C308, C309, C310, C311, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413, C415
PO6	C103, C106, C112, C113, C116, C117, C120, C211, C218, C219, C220, C301, C302, C307, C311, C324, C407, C408, C409, C413, C415
PO7	C102, C106, C111, C113, C116, C117, C208, C209, C211, C218, C219, C220, C307, C311, C324, C407, C409, C410, C415
PO8	C102, C104, C106, C107, C109, C111, C113, C115, C116, C117, C119, C120, C208, C209, C211, C217, C218, C219, C220, C221, C307, C311, C312, C315, C316, C319, C320, C324, C401, C402, C405, C406, C409, C410, C415
PO9	C102, C103, C104, C105, C106, C107, C108, C109, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C204, C205, C206, C207, C208, C209, C210, C211, C213, C214, C217, C218, C220, C221, C301, C302, C303, C304, C307, C308, C309, C310, C311, C312, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C401, C402, C405, C406, C407, C408, C409, C410, C411, C412, C413, C415
PO10	C113, C117, C120, C204, C205, C208, C209, C211, C217, C218, C219, C220, C221, C301, C302, C303, C304, C305, C306, C307, C311, C317, C318, C319, C320, C323, C324, C325, C326, C401, C402, C405, C406, C407, C409, C413, C415
PO11	C101, C102, C104, C106, C107, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C215, C216, C217, C218, C219, C220, C221, C301, C302, C303, C304, C305, C306, C307, C308, C309, C310, C311, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413, C415

PSO:

PO Number	List of Courses
PSO1	C101, C104, C105, C107, C108, C110, C111, C113, C116, C117, C120, C201, C202, C203, C204, C205, C206, C207, C208, C209, C211, C212, C213, C214, C215, C216, C217, C218, C220, C301, C302, C303, C304, C305, C306, C308, C309, C311, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C401, C402, C403, C404, C405, C406, C407, C408, C409, C411, C412, C413, C414, C415
PSO2	C104, C105, C107, C108, C113, C114, C117, C118, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C213, C214, C215, C216, C217, C218, C220, C221, C301, C302, C303, C304, C305, C306, C308, C309, C310, C311, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C401, C402, C403, C404, C405, C406, C407, C408, C409, C411, C413, C414, C415

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 :	C202	Semester :	3

Course Outcome	Statements
C202.1	Explain the current voltage characteristics of semiconductor devices.
C202.2	Analyze DC circuits and relate AC models of semiconductor devices with their physical operation
C202.3	Design and analysis of amplifier circuits
C202.4	Evaluate frequency response to understand behavior of electronics circuits

Course Code :	C213	Semester :	4

Course Outcome	Statements
C213.1	Describe various types of noise and evaluate their impact on communication systems
C213.2	Analyze the operation of AM, FM, and PM modulation and demodulation systems
C213.3	Illustrate and compare block diagrams of different analog communication receivers
C213.4	Apply sampling concepts to different pulse modulation methods
C213.5	Differentiate and summarize TDM and FDM techniques used in communication

Course Code :	C301	Semester :	5

Course Outcome	Statements
C301.1	Identify different functionalities and architecture of 8085 microprocessor
C301.2	Identify different functionalities and architecture of 8051 microcontroller
C301.3	Write programs for 8051 microcontroller based systems with the help of appropriate instruction set
C301.4	Interface different I/Os with 8051 microcontroller for various applications
C301.5	Identify different functionalities and architecture of ARM 7

Course Code :	C315	Semester :	6

Course Outcome	Statements
C315.1	Describe the basics of information theory and coding techniques
C315.2	Determine the minimum number of bits per symbol required to represent the source and the maximum rate at which a reliable communication can take place over the channel
C315.3	Describe and determine the performance of different waveform techniques for the generation of digital representation of signals
C315.4	Determine methods to mitigate inter symbol interference in base-band transmission system

C315.5	Describe and determine the performance of different error control coding schemes for the reliable transmission of digital representation of signals and information over the channel of Communication systems

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

Course Outcome	Statements
C401.1	Classify different types of propagation models
C401.2	Explain the cellular fundamentals and estimate the coverage and capacity of cellular systems
C401.3	Illustrate the fundamentals and system architecture of GSM, 2.5G, IS-95 and UMTS
C401.4	Elaborate on the concepts and principles 4G network deployment and optimization
C401.5	Identify the emerging technologies for upcoming mobile communication systems

Course Code :	**C411**	**Semester :**	**8**

Course Outcome	Statements
C411.1	Explain the fundamentals, architecture, design issues and standards and spectrum of various wireless network and compare them
C411.2	Compute different parameters of wireless networks
C411.3	Evaluate various wireless systems and deduce some conclusion
C411.4	Simulate various wireless systems using different simulation softwares

1.4.2 Course Articulation Matrix (15) :

1 . course name : C2C202

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C2C202.1	Explain the	2	3	-	-	-	-	-	-	-	-	1
C2C202.2	Analyze DC	3	1	1	1	-	-	-	-	-	-	1
C2C202.3	Design and	3	1	1	1	-	-	-	-	-	-	2
C2C202.4	Evaluate fre	1	1	-	1	-	-	-	-	-	-	1
Average		**2.25**	**1.50**	**1.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.25**

2 . course name : C2C213

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C2C213.1	Describe va	3	3	2	2	1	-	-	-	1	-	1
C2C213.2	Analyze the	3	3	2	2	1	-	-	-	1	-	1
C2C213.3	Illustrate an	3	3	2	2	1	-	-	-	1	-	1
C2C213.4	Apply samp	3	3	3	2	1	-	-	-	1	-	1
C2C213.5	Differentiate	3	3	2	2	1	-	-	-	1	-	1
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3 . course name : C3C301

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C3C301.1	Identify diffe	1	1	-	-	-	-	-	-	1	-	1
C3C301.2	Identify diffe	3	1	1	-	-	-	-	-	1	-	1
C3C301.3	Write progr	3	3	3	3	3	1	-	-	2	1	1
C3C301.4	Interface di	3	3	3	3	3	1	-	-	2	1	1
C3C301.5	Identify diffe	1	1	-	-	-	-	-	-	1	-	1
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4 . course name : C3C315

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C3C315.1	Describe th	1	1	1	1	1	-	-	-	1	-	1
C3C315.2	Determine t	2	3	1	3	3	-	-	3	2	-	2
C3C315.3	Describe ar	2	3	3	3	3	-	-	3	3	-	2
C3C315.4	Determine t	3	3	3	3	3	-	-	3	3	-	2

C3C315.5	Describe ar	2	3	3	3	3	-	-	3	3	-	2
Average		**2.00**	**2.60**	**2.20**	**2.60**	**2.60**	**0.00**	**0.00**	**3.00**	**2.40**	**0.00**	**1.80**

5 . course name : C4C401

Course	**Statements**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
C4C401.1	Classify diff	3	1	-	1	-	-	-	-	3	-	-
C4C401.2	Explain the	3	3	2	3	1	-	-	2	2	1	-
C4C401.3	Illustrate th	3	3	3	3	1	-	-	2	2	1	-
C4C401.4	Elaborate o	3	3	3	3	1	-	-	2	1	1	-
C4C401.5	Identify the	1	1	1	1	-	-	-	2	1	-	-
Average		**2.60**	**2.20**	**2.25**	**2.20**	**1.00**	**0.00**	**0.00**	**2.00**	**1.80**	**1.00**	**0.00**

6 . course name : C4C411

Course	**Statements**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
C4C411.1	Explain the	3	3	2	1	1	-	-	-	1	-	3
C4C411.2	Compute di	3	3	3	3	3	-	-	-	2	-	3
C4C411.3	Evaluate va	3	3	3	3	3	-	-	-	2	-	3
C4C411.4	Simulate va	3	3	3	3	3	-	-	-	2	-	3
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

1 . Course Name : C2C202

Course	PSO1	PSO2
C2C202.1	1	-
C2C202.2	2	-
C2C202.3	3	1
C2C202.4	3	1
Average	**0.00**	**0.00**

2 . Course Name : C2C213

Course	PSO1	PSO2
C2C213.1	2	1
C2C213.2	3	1
C2C213.3	3	1
C2C213.4	3	1
C2C213.5	2	1
Average	**0.00**	**0.00**

3 . Course Name : C3C301

Course	PSO1	PSO2
C3C301.1	1	-
C3C301.2	1	-
C3C301.3	2	1
C3C301.4	2	1
C3C301.5	1	-
Average	**0.00**	**0.00**

4 . Course Name : C3C315

Course	PSO1	PSO2
C3C315.1	1	-
C3C315.2	2	2
C3C315.3	3	2
C3C315.4	3	2

C3C315.5	2	2
Average	**2.20**	**2.00**

5 . Course Name : C4C401

Course	PSO1	PSO2
C4C401.1	1	1
C4C401.2	1	1
C4C401.3	1	1
C4C401.4	1	1
C4C401.5	1	1
Average	**0.00**	**0.00**

6 . Course Name : C4C411

Course	PSO1	PSO2
C4C411.1	1	-
C4C411.2	2	1
C4C411.3	2	1
C4C411.4	2	1
Average	**0.00**	**0.00**

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	3.00	2.00	PO3	1.20	1.00	PO6	PO7	PO8	PO9	PO10	1.00
C102	2.50	1.00	PO3	1.00	PO5	PO6	1.00	1.00	1.00	PO10	1.00
C103	1.50	1.67	1.00	1.00	PO5	1.00	PO7	PO8	1.00	PO10	PO11
C104	1.00	2.00	1.00	1.50	1.00	PO6	PO7	1.00	1.00	PO10	1.00
C105	3.00	2.00	1.00	1.00	PO5	PO6	PO7	PO8	1.00	PO10	PO11
C106	2.00	1.33	0.50	1.00	PO5	0.50	0.50	0.50	1.00	PO10	0.50
C107	1.00	2.00	1.00	1.50	1.00	PO6	PO7	1.00	1.00	PO10	1.00
C108	3.00	2.00	1.00	1.00	PO5	PO6	PO7	PO8	1.00	PO10	PO11
C109	PO1	1.00	PO3	1.00	PO5	PO6	PO7	1.00	1.00	PO10	1.00
C110	3.00	2.00	1.00	1.20	1.00	PO6	PO7	PO8	PO9	PO10	1.00
C111	2.75	1.67	1.00	1.00	PO5	PO6	1.00	1.00	1.00	PO10	1.00
C112	1.75	1.75	1.00	1.00	PO5	1.00	PO7	PO8	1.00	PO10	1.00
C113	1.00	1.40	1.40	1.50	1.50	1.00	1.00	1.00	1.80	1.00	2.00
C114	2.00	1.67	1.83	2.60	2.75	PO6	PO7	PO8	1.00	PO10	1.00
C115	PO1	1.00	PO3	1.00	1.00	PO6	PO7	1.00	1.67	PO10	1.00
C116	2.25	1.71	1.00	1.00	PO5	0.50	0.50	0.50	1.00	PO10	1.00
C117	1.00	1.40	1.40	1.50	1.50	1.00	1.00	1.00	1.80	1.00	2.00
C118	2.00	1.67	1.83	2.6	2.75	PO6	PO7	PO8	1.00	PO10	1.00
C119	PO1	1.00	PO3	1.00	1.00	PO6	PO7	1.00	1.67	PO10	1.00
C120	2.00	2.00	2.00	1.60	1.00	1.00	PO7	1.00	1.00	1.00	2.00
C201	3.00	1.67	1.00	PO4	PO5	PO6	PO7	PO8	PO9	PO10	1.00
C202	2.25	1.50	1.00	1.00	PO5	PO6	PO7	PO8	PO9	PO10	1.25
C203	2.25	1.50	1.00	1.00	PO5	PO6	PO7	PO8	PO9	PO10	1.25
C204	2.60	2.40	2.50	2.20	1.00	PO6	PO7	PO8	1.60	1.00	2.20
C205	2.60	2.40	2.50	2.20	1.00	PO6	PO7	PO8	1.60	1.00	2.20
C206	3.00	2.60	1.80	2.40	2.60	PO6	PO7	PO8	1.00	PO10	2.20
C207	3.00	2.60	1.80	2.40	2.60	PO6	PO7	PO8	1.00	PO10	2.20
C208	3.00	2.00	1.75	1.00	1.00	PO6	1.00	1.00	2.50	1.00	2.25
C209	3.00	2.00	1.75	1.00	1.00	PO6	1.00	1.00	2.50	1.00	2.25
C210	2.00	2.00	1.50	1.00	1.00	PO6	PO7	PO8	1.00	PO10	1.00
C211	2.00	1.80	1.80	1.60	1.50	2.00	1.40	2.00	1.40	1.75	1.80
C212	3.00	2.25	1.00	1.25	1.00	PO6	PO7	PO8	PO9	PO10	1.00

C213	3.00	3.00	2.20	2.00	1.00	PO6	PO7	PO8	1.00	PO10	1.00
C214	3.00	3.00	2.20	2.00	1.00	PO6	PO7	PO8	1.00	PO10	1.00
C215	2.40	1.80	2.00	1.40	1.00	PO6	PO7	PO8	PO9	PO10	1.60
C216	2.40	1.80	2.00	1.40	1.00	PO6	PO7	PO8	PO9	PO10	1.60
C217	2.25	2.25	2.00	2.50	1.00	PO6	PO7	1.00	1.50	1.00	1.25
C218	1.80	2.00	2.20	2.20	2.60	1.00	1.00	2.00	2.20	1.80	1.50
C219	PO1	PO2	PO3	PO4	PO5	2.13	2.25	1.00	PO9	1.00	1.00
C220	2.00	1.80	1.80	1.60	1.50	2.00	1.40	2.00	1.40	1.75	1.80
C221	1.00	1.17	1.00	1.00	1.00	PO6	PO7	1.00	1.00	1.00	1.00
C301	2.20	1.80	2.33	3.00	3.00	1.00	PO7	PO8	1.40	1.00	1.00
C302	2.20	1.80	2.33	3.00	3.00	1.00	PO7	PO8	1.40	1.00	1.00
C303	2.33	1.17	1.00	2.00	1.67	PO6	PO7	PO8	1.33	1.00	1.33
C304	2.33	1.17	1.00	2.00	1.67	PO6	PO7	PO8	1.33	1.00	1.33
C305	3.00	1.40	2.33	1.00	1.00	PO6	PO7	PO8	PO9	1.00	1.00
C306	3.00	1.40	2.33	1.00	1.00	PO6	PO7	PO8	PO9	1.00	1.00
C307	PO1	PO2	PO3	PO4	1.00	2.50	3.00	2.50	2.83	3.00	2.33
C308	1.00	2.50	2.00	1.50	2.50	PO6	PO7	PO8	2.50	PO10	1.00
C309	1.00	2.50	2.00	1.50	2.50	PO6	PO7	PO8	2.50	PO10	1.00
C310	2.00	2.00	1.50	1.00	1.00	PO6	PO7	PO8	1.00	PO10	1.00
C311	3.00	2.33	2.33	2.33	3.00	3.00	3.00	2.00	2.00	1.00	2.20
C312	2.50	1.00	PO3	PO4	PO5	PO6	PO7	2.50	3.00	PO10	PO11
C313	2.33	1.33	1.00	1.00	1.33	PO6	PO7	PO8	PO9	PO10	2.00
C314	2.33	1.33	1.00	1.00	1.33	PO6	PO7	PO8	PO9	PO10	2.00
C315	2.00	2.60	2.20	2.60	2.60	PO6	PO7	3.00	2.40	PO10	1.80
C316	2.00	2.60	2.20	2.60	2.60	PO6	PO7	3.00	2.40	PO10	1.80
C317	2.50	2.00	3.00	2.00	3.00	PO6	PO7	PO8	2.00	1.00	2.00
C318	2.50	2.00	3.00	2.00	3.00	PO6	PO7	PO8	2.00	1.00	2.00
C319	2.20	2.40	1.00	1.50	2.00	PO6	PO7	1.00	1.80	1.00	1.75
C320	2.20	2.40	1.00	1.50	2.00	PO6	PO7	1.00	1.80	1.00	1.75
C321	2.40	3.00	3.00	3.00	3.00	PO6	PO7	PO8	1.00	PO10	1.00
C322	2.40	3.00	3.00	3.00	3.00	PO6	PO7	PO8	1.00	PO10	1.00
C323	1.50	2.00	1.00	1.25	1.00	PO6	PO7	PO8	1.00	1.00	1.00
C324	3.00	2.33	2.33	2.33	3.00	3.00	3.00	2.00	2.00	1.00	2.20

C325	2.00	2.50	1.67	1.00	2.00	PO6	PO7	PO8	1.00	1.00	1.00
C326	2.00	2.50	1.67	1.00	2.00	PO6	PO7	PO8	1.00	1.00	1.00
C401	2.60	2.20	2.25	2.20	1.00	PO6	PO7	2.00	1.80	1.00	PO11
C402	2.60	2.20	2.25	2.20	1.00	PO6	PO7	2.00	1.80	1.00	PO11
C403	3.00	2.00	1.60	1.00	3.00	PO6	PO7	PO8	PO9	PO10	1.60
C404	3.00	2.00	1.60	1.00	3.00	PO6	PO7	PO8	PO9	PO10	1.60
C405	2.75	2.20	2.50	3.00	2.50	PO6	PO7	3.00	1.00	1.00	1.00
C406	2.75	2.20	2.50	3.00	2.50	PO6	PO7	3.00	1.00	1.00	1.00
C407	2.00	2.75	1.25	2.25	2.00	2.00	2.00	PO8	2.00	1.00	1.75
C408	2.50	2.50	1.50	1.75	2.25	1.00	PO7	PO8	1.25	PO10	1.00
C409	3.00	2.33	2.33	2.33	3.00	3.00	3.00	2.00	2.00	1.00	2.20
C410	2.00	1.25	1.00	1.25	1.00	PO6	3.00	1.00	1.00	PO10	1.00
C411	3.00	3.00	2.75	2.50	2.50	PO6	PO7	PO8	1.75	PO10	3.00
C412	2.00	1.20	PO3	1.00	1.00	PO6	PO7	PO8	1.00	PO10	1.40
C413	2.50	1.60	1.60	1.50	2.00	2.25	PO7	PO8	1.67	1.33	1.00
C414	2.67	2.00	1.00	2.00	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C415	3.00	3.00	1.50	2.00	2.00	2.50	3.00	1.50	2.00	1.00	3.00

Course Code	**PSO1**	**PSO2**
C101	1	PSO2
C102	PSO1	PSO2
C103	PSO1	PSO2
C104	1	1
C105	1	1
C106	PSO1	PSO2
C107	1	1
C108	1	1
C109	PSO1	PSO2
C110	1	PSO2
C111	1	PSO2
C112	PSO1	PSO2
C113	1	1
C114	PSO1	1
C115	PSO1	PSO2

C116	0.50	PSO2
C117	1	1
C118	PSO1	1
C119	PSO1	PSO2
C120	1	PSO2
C201	1	PSO2
C202	2.25	1
C203	2.25	1
C204	2	1
C205	2	1
C206	1.4	1
C207	1.4	1
C208	1.75	1.5
C209	1.75	1.5
C210	PSO1	1
C211	1.4	1.25
C212	1	PSO2
C213	2.6	1
C214	2.6	1
C215	2	1.33
C216	2	1.33
C217	2.25	1.25
C218	1.75	2.4
C219	PSO1	PSO2
C220	1.4	1.25
C221	PSO1	1
C301	1.4	1
C302	1.4	1
C303	1	1.2
C304	1	1.2
C305	1.4	1.4
C306	1.4	1.4
C307	PSO1	PSO2

C308	1	1
C309	1	1
C310	PSO1	1
C311	2.33	3
C312	PSO1	PSO2
C313	1.33	1
C314	1.33	1
C315	2.20	2.00
C316	2.20	2.00
C317	1.5	1.67
C318	1.5	1.67
C319	1.8	1.75
C320	1.8	1.75
C321	2	2
C322	2	2
C323	1.75	1.67
C324	2.33	3
C325	1	2
C326	1	2
C401	1	1
C402	1	1
C403	1.6	2
C404	1.6	2
C405	1.8	2
C406	1.8	2
C407	1.5	1.75
C408	1	1
C409	2.33	3
C410	PSO1	PSO2
C411	1.75	1
C412	1	PSO2
C413	3	3
C414	2	1

C415	2.33	2.33

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, stakeholder feedback and NEP 2020 guidelines.

Teaching methodologies emphasize learner-centric approaches such as flipped classrooms, experimental learning, interdisciplinary projects, and Information and Communication Technology (ICT) enabled instructions. Faculty members undergo regular training through Faculty Development Programs (FDP), peer mentoring, and pedagogical workshops. Academic calendars and teaching plans are accurately prepared and monitored.

Term Test (TT) evaluation, activity-based evaluation, and rubric-based evaluation are components of Continuous Assessment (CA). Students, faculties, 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 COs-POs 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.

Curriculum Design and Revision

The Electronics and Telecommunication (EandTC) Engineering curriculum is systematically framed and periodically revised by the Board of Studies (BoS) and approved by the Academic Council. Figure 2.1.1 shows the curriculum design process ensures alignment with Program Outcomes (POs), Program Specific Outcomes (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 Internet of Things (IoT), 5G Communication, Artificial Intelligence (AI), Embedded Systems and Robotics 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.

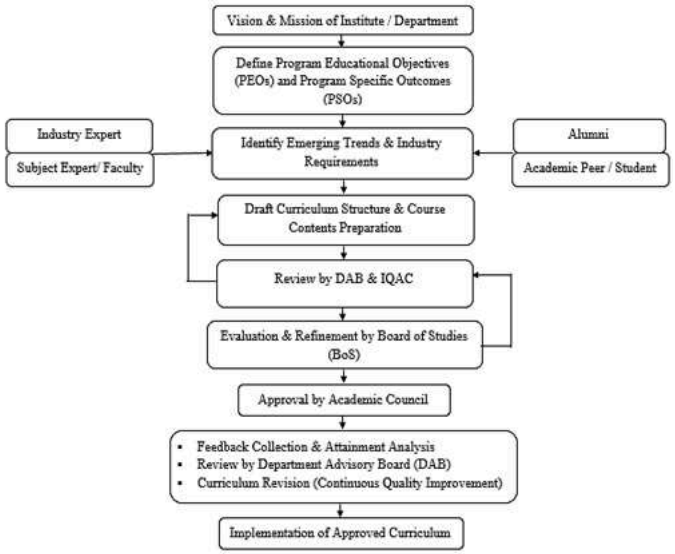


Figure 2.1.1: Process Flowchart for Curriculum Design and Revision

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

- Structured core courses cover essential and advanced EandTC domains, ensuring strong theoretical and technical foundations.
- Integrated laboratories and mini projects (semester projects) strengthen practical skills, design ability and hands-on competency.
- Electives and Emerging Technologies: A range of electives in IoT, AI/ML, embedded systems and communication technologies support specialization and flexibility.
- Internship and Capstone Project: Industry internship 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 Electronics and Telecommunication 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 Electronics and Telecommunication 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 Board of Studies (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.

A. Outcome-Based Education (OBE)

The Department of Electronics and Telecommunication 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 to 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

Electronics andTele Communication 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 Departmental Committee and academic bodies to ensure transparency, compliance and continuous quality improvement in the teaching learning process.

B. 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.

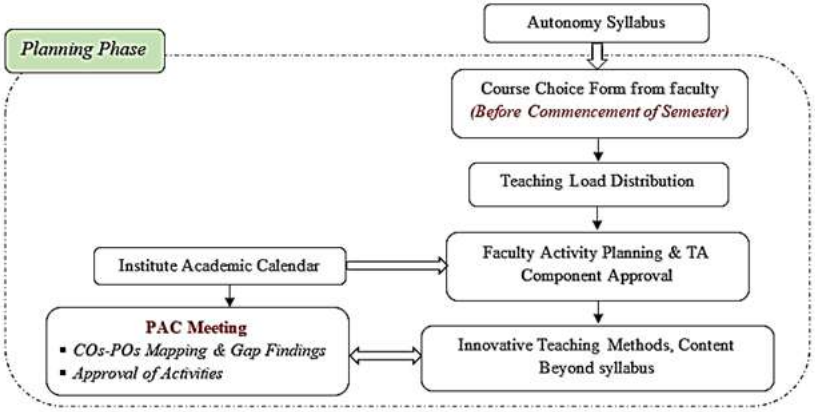


Figure 2.1.2: Planning Phase in Teaching Learning Process

Faculty Activity Planning and Approval:

- Faculty members prepare detailed lecture wise Teaching Plan.
- Teacher's Assessment (TA) components are decided to ensure effective course delivery and evaluation.
- Course content based Individual Presentation (PR), Group Discussion (GD), Mock Interviews (MI), Think Pair Share (TPS) 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, CodeChef, Add on Courses and additional content beyond the syllabus is integrated to boost students learning and prepare them for industry demands.

PAC Meeting:

- COs–POs 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 as illustrated in Figure 2.1.3.

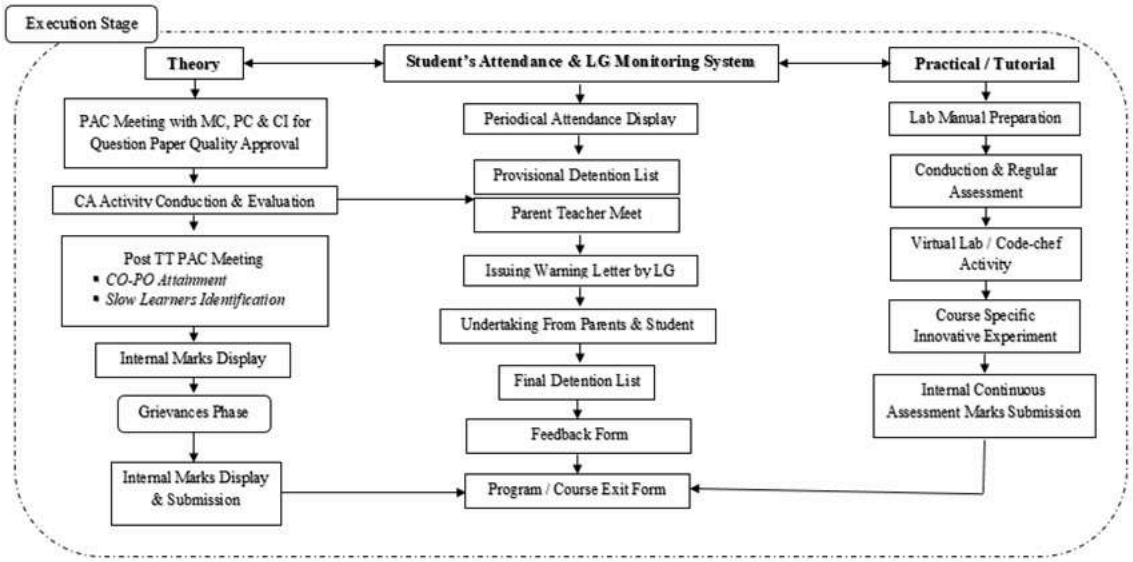


Figure 2.1.3: Execution Phase in Teaching Learning Process

Theory Component:

- PAC meetings with Course Instructor, Module Coordinator and Program Coordinator are conducted for Term Test question paper quality approval.
- Question papers for the Term Test are designed according to Blooms Taxonomy.
- 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 COs–POs 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, 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 conducts regular assessments.
- Students engage in virtual labs, coding platforms, and innovative experiments beyond curriculum.

Student Attendance and Local Guardian (LG) 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 need to submit formal undertakings when attendance falls below the required threshold.

C.3. Evaluation and Analysis Phase: Department Evaluation and Analysis phase involved in Teaching learning Process is briefly explained in Figure 2.1.4

ESE Examination (Theory and Practical): Students undergo the ESE as a comprehensive measure to evaluate and demonstrate the attainment of COs and POs.

Result Analysis: ESE results are analyzed to assess the level of COs attainment. The analysis identifies Advanced Learners, slow learners and area of improvement in the curriculum or teaching methods.

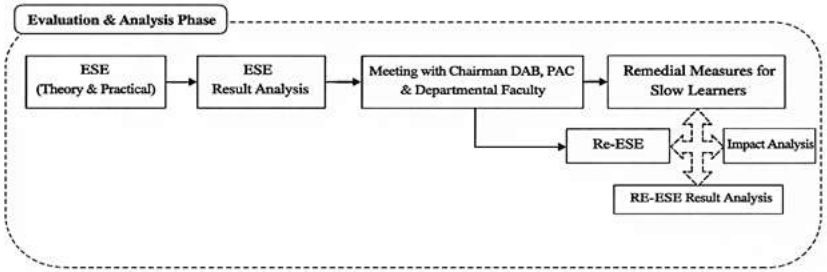


Figure 2.1.4: Evaluation and Analysis Phase in Teaching Learning Process

Review Meetings: Meetings are conducted with the Director, Controller of Examinations (COE), PAC, IQAC, and departmental faculty. The purpose is to analyze the results, identify gaps in COs-POs 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 COs attainment improvement.

Re-ESE (Supplementary Exam): Students who are eligible for re-attempt are given the opportunity to improve their performance through a re-examination ensuring equality and continuous learning.

Impact Analysis: Post Re-ESE, results are analyzed to measure the effectiveness of remedial actions and re-examination in improving COs attainment. Feedback from this analysis notifies 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 COs-POs attainment over time.

D. Outcome-Based Education (OBE) Implementation:

Based on two and half decades of teaching-learning experience, EandTC 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.

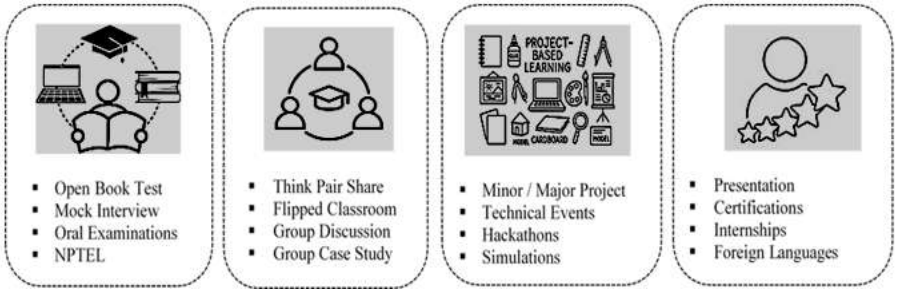


Figure 2.1.5: Pedagogical Approaches in the Teaching Learning Process

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.

- **Collaborative Learning Practices:** Collaborative learning is encouraged through group-centric academic tasks that promote peer interaction, shared problem-solving and active participation. These practices helps to 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 exposure. Students engage in project work that supports concept reinforcement, innovation and the development of analytical and design thinking skills relevant to EandTC 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 capability to deliver high-quality education aligned with current trends in Electronics and Telecommunication Engineering. Through FDP's, workshops, industry trainings, and certification courses faculty members have enhanced their proficiency in advanced domains such as embedded systems, communication technologies, signal processing and modern pedagogical practices as 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, student's gain stronger conceptual understanding, improved practical exposure and stronger attainment of COs and POs.

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

Sr. No	AY	Program Name / Topic	No. of Faculty	Conducted By	Duration	Outcome / Impact
1	24-25	Artificial Intelligence	5	IIIT, Vadodara	6 Months	Enhanced faculty competency in Artificial Intelligence concepts and their application in teaching and research.
2	24-25	Machine Learning	3	IIIT, Surat	6 Months	Strengthened knowledge of machine learning techniques enabling curriculum enrichment and project guidance.
3	24-25	High Performance Computing	4	COEP, Pune	6 Months	Improved expertise in high-performance computing for solving large-scale engineering problems.
4	24-25	AI and Digital Technologies for Sustainable Healthcare	1	Nirma University	1 Week	Developed skills in applying AI for sustainable healthcare technologies.
5	24-25	AI for Healthcare	3	VIT Pune	1 Week	Upgraded understanding of AI applications in healthcare for research and student project mentoring.
6	24-25	AI Powered Learning	1	ASC Salem	1 Week	AI-enabled pedagogical strategies to improve teaching effectiveness.

Sr. No	AY	Program Name / Topic	No. of Faculty	Conducted By	Duration	Outcome / Impact
7	24-25	AI-based Image Processing for Bio-medical Applications	1	NIT Patna	2 Week	Enhanced skills in AI-based image processing for biomedical applications.
8	24-25	Next-Gen AI: Innovations in ML, DL and Generative Models	1	St. Joseph's College Palai	1 Week	Strengthened proficiency in advanced AI models for research problem solving.
9	24-25	Computational Tools on Engineering and Research	1	Techno Engineering College Kolkata	1 Week	Improved ability to use computational tools for engineering analysis.
10	24-25	Cross Roads of AI and Signal Processing	2	NMIMS Indore	1 Week	Gained insights into AI and signal processing integration.
11	24-25	Empowering Innovations through RandD	2	A.G. Patil Institute Solapur	1 Week	Enhanced research and innovation capabilities.
12	24-25	Exploring AI: Trending Technologies	2	DMI COE Chennai	1 Week	Upgraded awareness of trending AI technologies.
13	24-25	Generative AI in Education	1	NMIMS Indore	1 Week	Developed competency in generative AI tools for teaching.
14	24-25	Intelligent VLSI	3	SIMATS Engineering	1 Week	Strengthened interdisciplinary understanding of AI-enabled VLSI.
15	24-25	Application of Generative AI	1	St. Mary's College Thrissur	1 Week	Improved teaching and research effectiveness using AI.
16	23-24	Recent trends in multidisciplinary research	1	VIT Pune	1 Week	Enhanced multidisciplinary research perspective.

Sr. No	AY	Program Name / Topic	No. of Faculty	Conducted By	Duration	Outcome / Impact
17	23-24	Antenna Design for Next Gen Wireless	1	VIT	1 Week	Upgraded antenna design skills for next-gen systems.
18	23-24	Communication and Signal Processing	1	NIT Silchar	1 Week	Strengthened expertise in advanced communication systems.
19	23-24	Emerging trends in Quantum and Embedded Systems	2	SSVPS Dhule	1 Week	Improved awareness of emerging technologies.
20	23-24	Grant Writing, IPR and Publication	1	NMIMS Indore	1 Week	Enhanced capability in grant writing and IPR.
21	23-24	NBA Process	5	NITTTR Chennai	3 Days	Strengthened understanding of NBA accreditation processes.
22	23-24	Recent Trends in Artificial Intelligence	2	PSN COE Tamilnadu	1 Week	Enhanced competency in recent AI trends in teaching and projects.
23	23-24	Research – Inception to Publishing	6	Dhanraj Baid Jain College Chennai	5 Days	Improved research methodology skills and publication readiness.
24	23-24	AI Tools: Computer Vision and NLP	3	Sinhgad Institute of Technology Pune	5 Days	Upgraded proficiency in AI tools for vision and NLP.
25	23-24	Java Full Stack	1	Wipro Talent NeXT	15 Days	Strengthened Java-based full-stack development skills.
26	23-24	Professional Development Program – IoT	1	NITTTR Chennai	5 Days	Improved practical knowledge of IoT system design.

Sr. No	AY	Program Name / Topic	No. of Faculty	Conducted By	Duration	Outcome / Impact
27	23-24	VLSI to System Design	2	AICTE and ARM and ST	5 Days	Enhanced understanding of VLSI system design.
28	22-23	ML and AI in Research and Innovations	5	Regional COE Jaipur	5 Days	Strengthened research capability using AI and ML.
29	22-23	Statistical Tools for Research	1	Amrita Vishwa Vidyapeetham	5 Days	Improved application of statistical tools in research.
30	22-23	Engaging Learning and Leadership	1	Zensar	3 Days	Enhanced leadership and innovative teaching practices.
31	22-23	Current Trends in IT Sector	1	ISTE Faculty Chapter	4 Days	Upgraded awareness of current IT industry trends.
32	22-23	Applications of Mathematics	1	Institute of Science and Technology Chennai	2 Week	Strengthened mathematical modelling skills.
33	22-23	Data Science and Machine Learning	1	Godavari COE Jalgaon	1 Week	Enhanced data analytics and ML skills.
34	22-23	Data Science and ML	1	DJ Sanghavi COE Mumbai	1 Week	Improved competency in data science techniques.
35	22-23	Advanced VLSI Architectures	1	Lakireddy Bali COE AP	5 Days	Upgraded knowledge of advanced VLSI architectures.
36	22-23	Emerging Technologies in ML	1	Godavari Foundation Jalgaon	1 Week	Strengthened understanding of emerging ML technologies.
37	22-23	Emerging trends in Communication and SP	3	Budge Budge IoT Kolkata	1 Week	Enhanced expertise in next-generation communication systems.

Sr. No	AY	Program Name / Topic	No. of Faculty	Conducted By	Duration	Outcome / Impact
38	22-23	AICTE Examination Reforms	3	DYPCOE Pune	1 Week	Improved awareness of AICTE examination reforms.
39	22-23	Innovation, Research and IPR	1	SSGBCOEandT Bhusawal	1 Week	Strengthened research culture and IPR awareness.
40	22-23	Microwave Passive Circuit Design	1	MITS	5 Days	Enhanced skills in microwave circuit design.
41	22-23	Microwave and mm Wave Communication	1	Haldia Institute of Technology	5 Days	Upgraded knowledge of microwave and mm Wave technologies.
42	22-23	Multidisciplinary Research Trends	2	VIIT Pune	1 Week	Improved interdisciplinary research orientation.
43	22-23	Semiconductor Devices and Sensors	2	KL University AP	1 Week	Strengthened understanding of semiconductor devices.
44	22-23	Research Methodology	1	Sinhgad COE Kondhwa	1 Week	Enhanced research methodology skills.
45	22-23	Research Paper Writing	5	Nutan COER	1 Week	Improved technical writing and publication skills.
46	22-23	Medical Image Analysis using AI	1	COE Visakhapatnam	5 Days	Upgraded skills in AI-based medical image analysis.
47	22-23	5G Antenna Design using HFSS	1	ARK Info Solutions	1 Day	Enhanced practical knowledge of 5G antenna design.

During the assessment period, faculty members actively participated in various FDP's, workshops, industry trainings and certification programs covering emerging and core areas of Electronics and Telecommunication Engineering. These programs are conducted by reputed academic institutions and industry bodies which enhanced faculty technical competency, pedagogical effectiveness and research orientation. Impact of Faculty Development Programs such as:

- Enhanced faculty competency in emerging and core EandTC 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, Shirpur is prepared through a structured process aligned with OBE as shown in Figure 2.1.6.

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

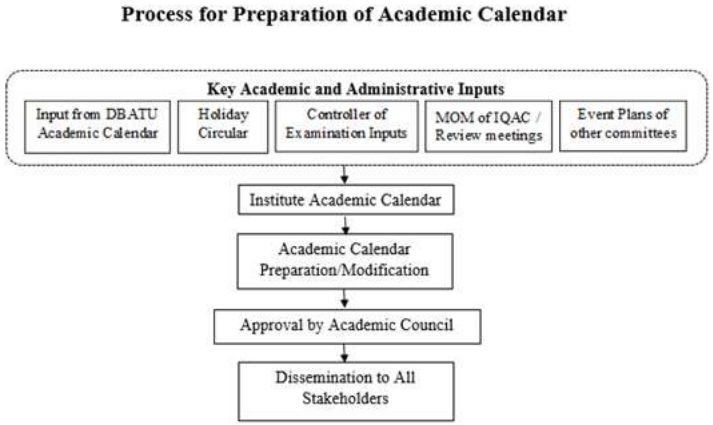


Figure 2.1.6: Academic Calendar Preparation Process Flow

- **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	15-17/9/25	15-17/9/25	NA	
3	Term Test-II	13-15/11/25	15-19/11/25	3 days Later	Syllabus Completion

AY 2025-26				Odd SEM	
Sr. No	**Activity / Event**	**Planned Date**	**Conducted Date**	**Deviation (if any)**	**Reason for Deviation / Action Taken**
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	Parents Meet	22/9/25	22/9/25	NA	
6	End of Classes	22/9/25	22/9/25	NA	
7	ESE (TH and PR) Conduction	20/12/2025	20/12/2025	NA	
8	Presentations/ Group Discussion	8-10/9/25	8-10/9/25	NA	
9	Mock Interview	25-28/10/25	25-28/10/25	NA	
10	Laboratory Completion	22/11/25	22/11/25	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 COs 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 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 and PSO 1 and 2
Presentation	Improves PO10 (Communication) ,PO9 (Teamwork) and PSO 1 and 2
Moodle Quiz	Strengthens PO1 (Engineering Knowledge) and PO2 (Problem Analysis) and PSO 1 and 2.
Group Discussion	Enhances PO9 (Teamwork) and PO8 (Ethics) and PSO 1 and 2.
Virtual Lab	Improves PO1, PO2 and PSOs related to practical skills and PSO 1 and 2
Mock Interview	Enhances PO10 (Communication), PO9 (Teamwork), and PO8 (Professional Ethics) and PSO 1 and 2
Innovative Component	Encourages PO3 (Design/Development), improves PO2 and 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 Electronics and Telecommunication 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 circuit analysis, communication systems, signal processing, embedded systems and modern electronic tools.

- Continuous Assessment (CA) 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 COs 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 and 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 COs–POs 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 and Assessment Plans, CA/ESE records	• Ensures academic plan adherence, • Identifies gaps, corrective actions
Peer Reviews	Continuous/semester	Lecture and lab observations, project supervision, feedback on teaching- learning	• Improves teaching-learning effectiveness, aligns with COs
IQAC-Led Monitoring	Three per Year	Academic calendar adherence, course delivery, CA/ESE oversight, project evaluation	• Ensures teaching-learning quality and transparent assessment, • Systematic improvement in COs–POs attainment
External Academic Audits	Once/Year	Audit by external experts on syllabus coverage, course files	• 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 COs–POs attainment, higher student engagement and continuous quality improvement.

K. Student Support and Mentoring

The Electronics and Telecommunication 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 (LG) interactions
- Performance in TT and TA Activities.

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

- Slow Learners
- Advanced Learners

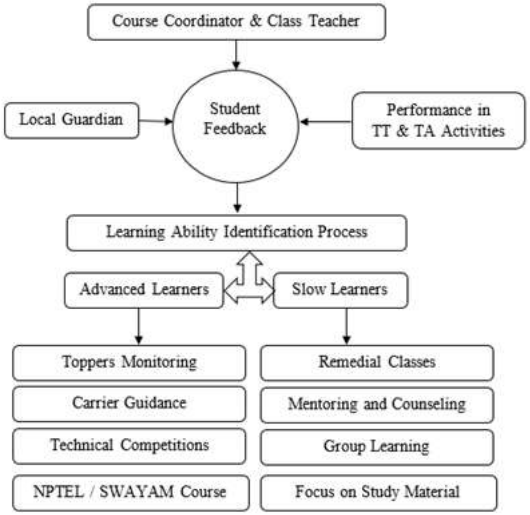


Figure 2.1.7: Learning Ability Identification and Student Support Mechanism

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 foster research orientation, strengthen problem-solving skills, and prepare students for higher studies and professional excellence, leading to improved achievements, publications, and 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 rate. 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 EandTC 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 and Lab Tools	MATLAB, Scilab, CISCO Packet Tracer and Virtual Lab platforms for circuits, DSP, VLSI, communication systems and embedded programming.
Online Learning Resources	NPTEL/SWAYAM videos, e-books, digital repositories

Aspect	Description
Digital Content Delivery Platforms	Google Classroom, MS Teams, Moodle for assignments, notes, announcements and communication.
Project and Publication Support	Plagiarism Checking and Paraphrase Tools, Virtual Instrumentation and open-source tools for IoT, Machine Learning, and DSP applications.

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 Hackathons and 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 structured institutional platforms such as RCPIT Wings, Commexus, StemSage, VhyuAstra and many more. 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 student's 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 Electronics and Telecommunication Engineering Department implements well-defined quality improvement initiatives to strengthen the teaching–learning process and ensure sustained academic excellence. These initiatives are aligned with OBE principles and are systematically reviewed through data-driven analysis, stakeholder feedback. Continuous monitoring of academic outcomes enables the department to enhance curriculum delivery, assessment methods and overall student learning experience. Key Quality Improvement Initiatives and their Impact on Teaching–Learning Process are

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's 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 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 EandTC 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 and 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 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 research paper/patent based on project outcomes.

The department of Electronics and Telecommunication 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.

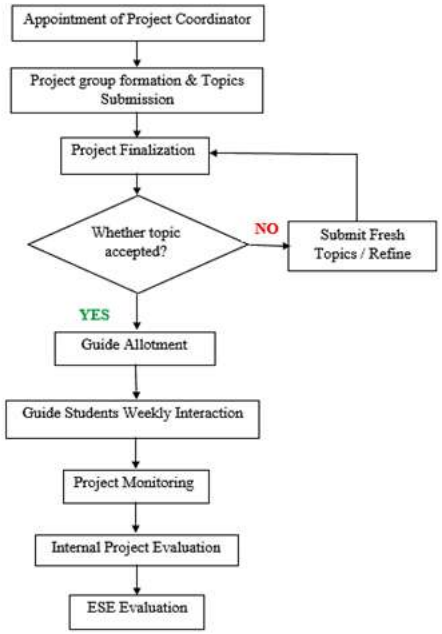


Figure 2.2.1: Process Flow for Project Topic Approval, Execution and Evaluation

- **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 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 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 software-hardware 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 and 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 (System Design and Partial Implementation)	• Status of log book up to Monitoring–II • Hardware requirement analysis and component selection • Planning and Designing system/block diagram • Partial implementation (30–40%) of Hardware
Monitoring –III (Implementation , Testing and Documentation)	• Status of log book up to Monitoring–III • Hardware implementation and functional testing • Implementation plan for Project Stage–II • 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 2.2.3 presents the continuous 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	Design / Simulation / Logic	Programming	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 • Project progress up to 40%
Monitoring –II	• Verification of log book up to Monitoring–II • Hardware interfacing and completion of coding

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

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

- 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 and Table 2.2.7 respectively
- 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

Sr. No.	Activity	Tentative Period
1	Project registration and submission of three probable topics with abstract	Last week of January
2	Scrutiny, topic finalization, and guide allocation by departmental committee	Second week of February
3	Introduction, literature review, and requirement analysis	Last week of February
4	Project planning, scheduling	First week of March
5	System design and architecture	Second week of March
6	Hardware Implementation of Project Stage-I	Third week of March
7	Partial Demonstration of Project Stage-I	Last week of March
8	Completion of Project Stage-I with report submission (as per guide approval)	Second week of April

Sr. No.	Activity	Tentative Period
9	ICA and ESE evaluation of Project Stage-I	Third week of April

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	Demo of Project Stage-II (In front of departmental committee).	Last Week of August
3	System Implementation up to 70%.	Second week of September
4	Demo of Project Stage-II (In front of departmental committee).	Third week of September
5	System Implementation up to 100%.	First week of October
6.	Demo of Project Stage-II (In front of departmental committee).	Second week of October
7	Completion of Project Stage-II along with the report, Publications	First week of November
8	ICA and ESE evaluation of Project Stage-II	Second 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:

- Embedded Systems and IoT
- Signal, Image and Video Processing
- Artificial Intelligence and Data Analytics
- Robotics, Control and Automation
- Communication and Networking
- Power Electronics and Renewable Energy Systems
- Biomedical and Healthcare Electronics

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	Embedded Systems and IoT	18	24	23	PO1 to PO12	PSO 1, PSO 2
2	Communication and Networking	2	1	2	PO1 to PO12	PSO 1
3	Signal, Image and Video Processing	1	1	0	PO1 to PO12	PSO 1, PSO 2
4	Power Electronics and Renewable Energy ystems	2	2	1	PO1 to PO12	PSO 1
5	Artificial Intelligence and Data Analytics	2	2	0	PO1 to PO12	PSO 2
6	Biomedical and Healthcare Electronics	1	1	3	PO1 to PO12	PSO 1, PSO 2
7	Robotics, Control and Automation	4	7	4	PO1 to PO12	PSO 1, PSO 2
Total		**30**	**38**	**33**		

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

Domain Name: Artificial Intelligence and Data Analytics						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
24-25	Intelligent waste management system	Prof P M Goad	Environment (reduces pollution), Cost (efficient), Ethics (responsible waste disposal)	Application	PO1 to PO12, PSO2	SDG 11 SDG 12

Domain Name: Artificial Intelligence and Data Analytics						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
24-25	Face Recognition in security system	Dr. P G Patil	Safety (enhanced security), Ethics (privacy concerns), Cost (implementation)	Application	PO1 to PO12, PSO1	SDG 16 SDG 9
25-26	AI versus Human Generated Images (Raspberry Pi based)	Prof. Pravin R. Bhole	Ethics (AI bias and authenticity), Cost (low-cost Raspberry Pi), Safety (data handling)	Research	PO1 to PO12, PSO2	SDG 9 SDG 4
25-26	Smart Wearable Safety Device for Women: An Intelligent Security Solution	Dr. P G Patil	Safety (personal security), Ethics (data privacy), Cost (affordable wearable)	Product	PO1 to PO12, PSO2	SDG 5 SDG 3

Domain Name: Biomedical and Healthcare Electronics						
AY	**Project Name**	**Guide Name**	**Key Factors**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
23-24	Health tracking elbow for athletes	Dr. T H Jaware	Safety, Cost (affordable device), Ethics (data privacy), Environment	Product	PO1 to PO12, PSO1	SDG 3 SDG 9
23-24	Low-cost ventilator	Dr. T H Jaware	Safety (life-critical device), Cost (low-cost), Ethics (patient care), Environment	Product	PO1 to PO12, PSO2	SDG 3 SDG 9

Domain Name: Biomedical and Healthcare Electronics						
AY	**Project Name**	**Guide Name**	**Key Factors**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
23-24	TB and Covid-19 testing machine monitoring using IoT	Prof J P Patil	Safety (accurate testing), Ethics (data privacy), Cost (low maintenance), Environment	Application	PO1 to PO12, PSO3	SDG 3 SDG 9
Domain Name: Communication Engineering						
AY	**Project Name**	**Guide Name**	**Key Factors**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
23-24	Walkie Talkie System for College Premises	Dr. T. H. Jaware	Low power consumption Safe RF communication within campus	Application	PO1 to PO12, PSO2	SDG-4 SDG-9
23-24	Emergency Medicine Delivery System using UAV	Dr. M. B. Dembrani	Life-saving emergency support Safety in UAV navigation	Product	PO1 to PO12, PSO2	SDG-3 SDG-9
24-25	Wireless Announcement System using Transceiver	Dr. S. D. Patil	Reduced wiring and energy consumption Safe wireless transmission Low installation and maintenance cost	Application	PO1 to PO12, PSO1, PSO2	SDG-4 SDG-11
25-26	GSM Mobile Motor Starter Controller	Prof. Dr. Smital Dhanraj Patil	Energy efficient motor operation Safety through remote control Ethical use in agriculture Reduced manpower and cost	Product	PO1 to PO12, PSO1, PSO2	SDG-7 SDG-9

Domain Name: Biomedical and Healthcare Electronics						
AY	**Project Name**	**Guide Name**	**Key Factors**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
25-26	Automated Bus Scheduling and Route Optimization Platform (Interdisciplinary Project)	Prof. Dr. Prashant G Patil	Reduced fuel consumption and emissions Passenger safety and reliability Cost optimization for transport systems	Application / Research	PO1 to PO12, PSO1, PSO2	SDG-11 SDG-13

Domain Name : Power Electronics and Renewable Energy Systems						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
23-24	Electricity generation using solid waste material	Prof. J. P. Patil	Solid waste management, reduction of landfill pollution, safe energy conversion,	Application	PO1 to PO12, PSO1, PSO2	SDG-7 SDG-11 SDG-12
24-25	Solar Powered Vacuum Cleaner	Prof. A. B. Jayaswal	Clean energy usage, indoor safety, reduced carbon emissions, ethical energy consumption, cost-effective	Product	PO1 to PO12, PSO1, PSO2	SDG-7 SDG-9 SDG-12
24-25	Wind and Solar Powered Laptop and Mobile Charging Station	Dr. M. B. Dembrani	Renewable hybrid energy, user safety, eco-friendly charging, ethical energy access, low-cost public utility	Product	PO1 to PO12, PSO1, PSO2	SDG-7 SDG-9 SDG-13

Domain Name : Power Electronics and Renewable Energy Systems						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
25-26	Power line Protection System	Prof. Dr. Tushar H. Jaware	Electrical safety, fault detection, infrastructure reliability, ethical power distribution	Application	PO1 to PO12, PSO1, PSO2	SDG-7 SDG-9 SDG-11
25-26	Generating Electricity from Waste Material	Prof. Dr. Tushar H. Jaware	Waste-to-energy conversion, environmental sustainability, safe power generation	Application	PO1 to PO12, PSO1, PSO2	SDG-7 SDG-11 SDG-12

Domain Name : Robotics, Control and Automation						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
23-24	EMG controlled Prosthetic Hand	Prof. S. D. Patil	User safety, biomedical ethics, assistive technology,	Product	PO1 to PO12, PSO1, PSO2	SDG-3, SDG-10
23-24	Shape based object sorting robot	Prof. N. L. Lokhande	Industrial safety, ethical automation, energy efficiency, reduced manpower cost	Application	PO1 to PO12, PSO1, PSO2	SDG-9
23-24	Tree climbing robot	Dr. P. G. Patil	Worker safety, environmental monitoring, ethical forest inspection, cost-effective design	Application	PO1 to PO12, PSO1, PSO2	SDG-15, SDG-13

Domain Name : Robotics, Control and Automation						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
23-24	Traffic controlling robot	Prof. K. H. Sonawane	Public safety, ethical traffic management, energy efficiency, reduced operational cost	Application	PO1 to PO12, PSO1, PSO2	SDG-11, SDG-3
24-25	Theft Proof Delivery Robot	Dr. M. B. Dembrani	Secure logistics, ethical monitoring, safety of goods, cost-efficient automation	Product	PO1 to PO12, PSO1, PSO2	SDG-9, SDG-11
24-25	Floor cleaner robot with self-charging power station	Dr. J. P. Patil	Electrical safety, energy efficiency, ethical automation, reduced labor cost	Product	PO1 to PO12, PSO1, PSO2	SDG-7, SDG-11
24-25	Wildlife observation robot using RF	Dr. P. G. Patil	Wildlife protection, non-intrusive monitoring, ethical observation, low-cost solution	Application	PO1 to PO12, PSO1, PSO2	SDG-15
24-25	Guided and autonomous robot	Prof. P. R. Bhole	Operational safety, ethical autonomy, energy efficiency, scalable robotic design	Research	PO1 to PO12, PSO1, PSO2	SDG-9
24-25	Wireless Floor cleaner Robot	Dr. T. H. Jaware	User safety, wireless energy efficiency, ethical automation, cost reduction	Product	PO1 to PO12, PSO1, PSO2	SDG-7, SDG-11

Domain Name : Robotics, Control and Automation						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
24-25	Surveillance Robot	Prof. N. L. Lokhande	Public safety, ethical surveillance, data privacy, cost-effective monitoring	Application	PO1 to PO12, PSO1, PSO2	SDG-11
24-25	Under water ROV	Dr. T. H. Jaware	Marine safety, environmental monitoring, ethical exploration, optimized operational cost	Research	PO1 to PO12, PSO1, PSO2,	SDG-14
25-26	A Modified Palliative Chair for Stress-Free Workspaces	Prof. Dr. Vijay Shrinath Patil	User comfort, health safety, ethical ergonomic design, affordable assistive product	Product	PO1 to PO12, PSO1, PSO2	SDG-3, SDG-8
25-26	Gesture recognition based robotic vehicle control using 3-axis accelerometer	Prof. Dr. Vinodkumar Ramesh Patil	Safe human-machine interaction, ethical control systems, low-cost sensors	Application	PO1 to PO12, PSO1, PSO2,	SDG-9
2025-26	Fire Fighter Drone (InterDisciplinary Project)	Prof. Dr. Tushar Hrishikesh Jaware	Human safety, disaster response, ethical emergency use, high-impact cost efficiency	Product / Research	PO1 to PO12, PSO 2	SDG-6, SDG-7,

Domain Name : Robotics, Control and Automation						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
25-26	Solar Based Cold Water ATM (Inter Disciplinary Project)	Prof. Dr. Prashant Gorakh Patil	Renewable energy utilization, public health safety, ethical water distribution, low operational and maintenance cost	Product	PO1 to PO12, PSO1, PSO2	SDG-6, SDG-7, SDG-11

Domain Name : Signal, Image and Video Processing						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
24-25	Under Water Object Detection	Dr. T. H. Jaware	Marine environmental monitoring, underwater navigation safety, ethical surveillance, cost-effective sensing and processing	Application	PO1 to PO12, PSO1, PSO2	SDG-9, SDG-14

Domain Name : Embedded Systems and IoT						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
23-24	IoT Based Weather Monitoring System	Dr P M Goad	Environmental monitoring, safety through alerts,	Application	PO1 to PO12, PSO1, PSO2	SDG-11, SDG-13
23-24	Raspberry-pi based android controlled wildlife observation robot	Prof P R Bhole	Wildlife safety, ethical observation, environmental protection	Application	PO1 to PO12, PSO1, PSO2	SDG-15, SDG-9

Domain Name : Embedded Systems and IoT						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
23-24	Mobile controlled Electronic massager with multiple assemblies	Dr. Vinod R Patil	User safety, healthcare ethics, energy efficiency, affordable solution	Product	PO1 to PO12, PSO1, PSO2	SDG-3
23-24	Complete Self driving car	Dr. A B Jayaswal	Passenger safety, ethical automation, energy efficiency, high development cost	Research	PO1 to PO12, PSO1, PSO2	SDG-9, SDG-11
23-24	Industrial waste water pollution alert System	Dr J B Jadhav	Environmental protection, industrial safety, ethical monitoring, low operational cost	Application	PO1 to PO12, PSO1, PSO2	SDG-6, SDG-12
23-24	Dam water level monitoring system	Prof V R Patil	Disaster prevention, public safety, ethical data usage, cost-effective system	Application	PO1 to PO12, PSO1, PSO2	SDG-6, SDG-11
23-24	Audio transmitter and receiver system for college	Prof K H Sonawane	Safe communication, ethical broadcasting, energy efficiency, low cost	Application	PO1 to PO12, PSO1, PSO2	SDG-4
23-24	Laser Engraver	Dr P G Patil	Operator safety, ethical manufacturing, efficient energy use, cost optimization	Product	PO1 to PO12, PSO1, PSO2	SDG-9
23-24	IoT based power consumption monitoring and cut-off controlling	Prof P M Goad	Energy conservation, electrical safety, ethical usage, reduced cost	Application	PO1 to PO12, PSO1, PSO2	SDG-7, SDG-12

Domain Name : Embedded Systems and IoT						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
23-24	Balloon watchdog monitoring	Prof B V Patil	Environmental observation, safety monitoring, ethical data capture, low cost	Application	PO1 to PO12, PSO1, PSO2	SDG-13
23-24	Air quality, noise pollution and weather monitoring system	Prof A B Jayaswal	Pollution monitoring, public safety, ethical sensing, economical deployment	Application	PO1 to PO12, PSO1, PSO2	SDG-11, SDG-13
23-24	Speed and accident alert system with fuel cut-off using IoT	Prof M L Patel	Road safety, accident prevention, ethical automation, low cost	Product	PO1 to PO12, PSO1, PSO2	SDG-3, SDG-11
23-24	ECG Plotter	Dr P M Goad	Patient safety, medical ethics, reliable monitoring, affordable healthcare	Application	PO1 to PO12, PSO1, PSO2	SDG-3
23-24	3D cube	Prof P R Bhole	Educational safety, ethical learning tool, low power, minimal cost	Application	PO1 to PO12, PSO1	SDG-4
23-24	Water monitoring boat	Dr. Vinod R Patil	Water safety, environmental monitoring, ethical data use, cost-effective	Application	PO1 to PO12, PSO1, PSO2	SDG-6
23-24	3D Scanner	Dr. A B Jayaswal	Safe operation, ethical data capture, efficient design, optimized cost	Product	PO1 to PO12, PSO1, PSO2	SDG-9
23-24	Raspberry-pi based reader for blind	Dr J B Jadhav	Assistive safety, ethical inclusion, low power, affordable solution	Application	PO1 to PO12, PSO1, PSO2	SDG-3, SDG-10

Domain Name : Embedded Systems and IoT						
AY	**Project Name**	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
23-24	PCB engraving machine	Prof V R Patil	Operator safety, ethical fabrication, energy efficiency, cost optimization	Product	PO1 to PO12, PSO1, PSO2	SDG-9
23-24	Cordless charging pad	Prof S D Patil	Electrical safety, efficient charging, ethical use, economical design	Product	PO1 to PO12, PSO1, PSO2	SDG-7

2.3 Internship/Industrial Training (10) Total Marks 10.00

Institute Marks : 10.00

Internship and Industrial Training provide EandTC 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 POs/PSOs 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.

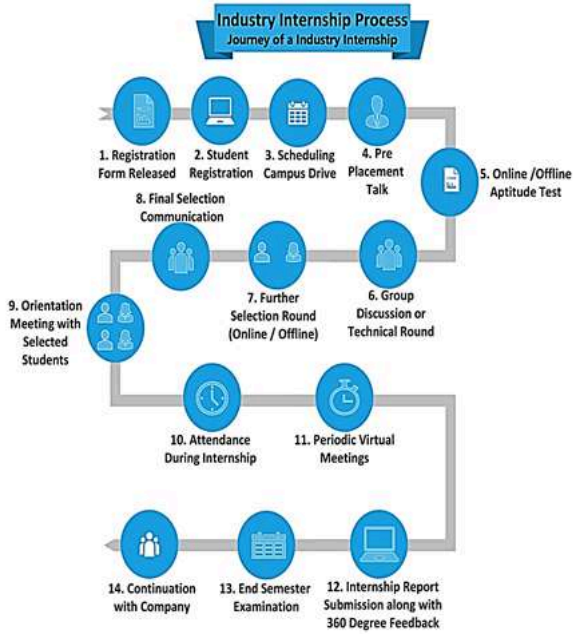


Figure 2.3.1: Flowchart of Industry Internship Process

Step 1: Registration Form Release: The Training and Placement (TandP) 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 TandP Department.

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

Step 4: Pre-Placement Talk: The Company conducts a pre-placement talk by introducing 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 student's 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/offline mode.

Step 8: Final Selection Communication: After completion of all rounds, the company sends the final selection list to the Training and 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 TandP 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 TandP 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 satisfactory as per company officials they can resume their duty as per said timeline given by company officials.

B. Mapping of Internship/ Industrial Training with PO's and PSO's:

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

Table No.2.3.1: Summary of Student Internship, Skill Development and PO–PSO Mapping

Company Name	Students Benefitted	Duration	Company Domain	Skill Gained	Relevance to POs and PSOs
Cloverdale Robotics Learning	1	4 Months	Robotics and Automation	Hands-on experience in robotics fundamentals, automation systems, sensors, actuators	PO1, PO3, PO5, PO9, PSO1
Numetry_ Technologies_Pvt._Ltd.	1	4 Months	IT Service	Exposure to software development lifecycle, application development, debugging, and professional IT tools	PO1, PO2, PO5, PO10, PSO2
Quality_ Kiosk	1	4 Months	IT Service	Exposure to software development lifecycle, application development, debugging, and professional IT tools	PO1, PO2, PO5, PO10, PSO2
Viney_ Corporation_Ltd.	1	4 Months	Manufacturing	Understanding of manufacturing operations, quality control, industrial safety practices, and production workflow	PO1, PO2, PO6, PO7, PSO1
Yamai_Technologies	1	4 Months	Service Industry	Exposure to service-based engineering operations, troubleshooting, customer interaction, and teamwork	PO1, PO2, PO9, PO10, PSO2
Avionics_Intern,Edith_ Defence_Systems	1	4 Months	Drone Industry	Training in avionics systems, UAV components, testing procedures.	PO1, PO3, PO5, PO7, PSO1

Company Name	Students Benefitted	Duration	Company Domain	Skill Gained	Relevance to POs and PSOs
Gala_Precision_Engineering_Ltd	1	4 Months	manufacturing	Understanding of manufacturing operations, quality control, industrial safety practices, and production workflow	PO1, PO2, PO6, PO7, PSO1
Ingeniyum_Drives	1	4 Months	electric motors and gearboxes for industrial automation	Practical knowledge of electric drives, motors, gearboxes, testing procedures, and automation systems	PO1, PO3, PO5, PO6, PSO1
Pratap_Technocrats_Private_Ltd.	1	4 Months	Telecom Network Maintenance	Exposure to telecom infrastructure, network maintenance, fault diagnosis, and safety standards	PO1, PO2, PO5, PO6, PSO2
Cipher_Web_Infotech	1	4 Months	IT Service	Exposure to software development lifecycle, application development, debugging, and professional IT tools	PO1, PO2, PO5, PO10, PSO2
FSD Certification Program By Symbiosis Skill University	1	4 Months	HTML and CSS, JavaScript Core + Advanced	Skills in HTML, CSS, JavaScript, frontend frameworks, backend development, databases, and deployment	PO1, PO3, PO5, PO12, PSO2
Maharstra Metro Rail Corporation Ltd	1	4 Months	Metro Rail	Understanding of metro rail systems, electrical basics, safety regulations, and public infrastructure	PO1, PO6, PO7, PO8, PSO1
Jabil	1	4 Months	manufacturing	Understanding of manufacturing operations, quality control, industrial safety practices, and production workflow	PO1, PO2, PO6, PO7, PSO1
Skorpion_Animation_Design_and Creation_Pvt._Ltd	1	4 Months	Animation and Design	Practical skills in animation software, graphic design, creative workflows, and media production	PO1, PO9, PO10, PO11, PSO2
Codeest	1	4 Months	IT Service	Exposure to software development lifecycle, application development, debugging, and professional IT tools	PO1, PO2, PO5, PO10, PSO2

Company Name	Students Benefitted	Duration	Company Domain	Skill Gained	Relevance to POs and PSOs
Gofloat_Technologies_Pvt_Ltd	1	4 Months	advanced underwater drone technology, flotation devices, and tracking systems	Exposure to underwater drone technology, flotation devices, tracking systems, testing, and marine engineering concepts	PO1, PO3, PO5, PO7, PSO1
Tata Motors Pune	2	4 Months	Automobile	Exposure to automobile manufacturing processes, vehicle systems, quality control practices, safety standards, and shop-floor operations	PO1 , PO2 ,PO6 PO7 and PSO1
BuildINT	2	4 Months	IT Service	Training in software development fundamentals, web/application development, debugging, and collaborative project work	PO1, PO2, PO5, PO10 , PSO2
Casepoint	3	4 Months	IT Service	Skills in HTML, CSS, JavaScript, frontend frameworks, backend development, and application deployment	PO1, PO2, PO5, PSO2
Fox_Solutions	4	4 Months	Industrial Automation	Exposure to software development lifecycle, data handling, application testing, and professional IT practices	PO1, PO2 , PO5, PSO2
Capitavia	6	4 Months	Stock market tactics, risk management	Understanding of stock market operations, trading strategies, portfolio diversification, risk analysis, financial decision-making	PO11 PO12 PSO2
Ambetronics_Engineering_Pvt_Ltd, Mumbai	8	6 Months	Service Industry- Gas Sensor manufacturing and Installation	Hands-on experience in gas sensor assembly, calibration, testing, industrial safety standards, basic electronics troubleshooting	PO1 PO3 PO4 PSO1
FSD Certification Program By Symbiosis Skill University	15	4 Months	HTML and CSS, JavaScript (Core + Advanced), Frontend Framework	Proficiency in HTML, CSS, JavaScript, frontend frameworks (React/Angular), backend development concepts, database handling	PO1 PO3 PO5 PO9 PO12 PSO2

Company Name	Students Benefitted	Duration	Company Domain	Skill Gained	Relevance to POs and PSOs
BEST - Bajaj Engineering Skills Training by Symbiosis Institute of Technology, Pune	76	6 Months	Mechatronics, Motion control and sensor Technology, Robotics and Automation, Industry 4.0	Hands-on training in mechatronic systems, motion control, industrial sensors, PLC basics, robotics automation, and Industry 4.0 concepts	PO1 PO3 PO5 PO6 PO12 PSO1
Cloverdale_ Robotics_ Learning	1	4 Months	Robotics and Automation	Hands-on experience in robotics fundamentals, automation systems, sensors, actuators, and basic programming	PO1, PO3, PO5, PO9, PSO1

C. Feedback:

A systematic mechanism is implemented to monitor and evaluate student learning outcomes during industrial training. Weekly progress and learnings are recorded through a Weekly Log Record, while discipline and internship duration compliance are ensured via an 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	Outcomes
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

Document Used	Nature of Data Collected	Parameters Analyzed	Method of Analysis	Outcomes
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 III, IV, and V semesters. These projects strengthen student's technical skills, problem-solving ability, and teamwork and presentation skills, while fostering design thinking and implementation capabilities. Each project concludes with a Semester Project Report submitted as part of requirement following a departmental format to ensure academic rigor and uniformity.

A. Identification of Projects and Guide Allocation

The project development process at Institute follows the OBE framework and 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 by a departmental committee based on relevance, innovation, technical depth, 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 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 project monitoring evaluated by a faculty panel appointed by the Head of the Department.

Table No.2.4.1: 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 panel 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	Hardware / Programming	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 system design, block diagrams, and circuit design (PO3), as well as experimentation, testing, and debugging (PO4).

Effective use of software and modern engineering tools such as MATLAB, Proteus, Python, and IoT platforms (PO5) is reinforced, while attention to social, environmental, and sustainability aspects (PO6, PO7) ensures responsible engineering practice. Students are trained to uphold safety, ethics, and data privacy (PO8), collaborate effectively in teams (PO9), and prepare thorough documentation, presentations, and oral reports (PO10).

The following Table 2.4.3, Table 2.4.4 and 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 Capstone projects			Mapping with POs	Mapping with PSOs
		25-26	24-25	23-24		
1	Embedded Systems and IoT	24	29	29	PO1 to PO12	PSO 1, PSO 2
2	Biomedical and Healthcare Electronics	01	02	00	PO1 to PO12	PSO 1
3	Power Electronics and Renewable Energy Systems	05	02	00	PO1 to PO12	PSO 1, PSO 2
4	Robotics, Control and Automation	05	03	06	PO1 to PO12	PSO 1
5	Signal, Image and Video Processing	00	00	01	PO1 to PO12	PSO 2
Total		**35**	**36**	**36**		

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 POs–PSOs Mapping

Sr. No.	Project Areas	No. of Capstone projects			Mapping with POs	Mapping with PSOs
		24-25	23-24	22-23		
1	Embedded Systems and IoT	22	23	30	PO1 to PO12	PSO-1, PSO-2
2	Biomedical and Healthcare Electronics	03	01	00	PO1 to PO12	PSO-1
3	Power Electronics and Renewable Energy Systems	01	03	00	PO1 to PO12	PSO-1
4	Robotics, Control and Automation	03	02	03	PO1 to PO12	PSO-1, PSO-2
5	Signal, Image and Video Processing	02	00	0	PO1 to PO12	PSO-1, PSO-2
6	Communication and Networking	02	01	01	PO1 to PO12	PSO-1, PSO-2
Total		**33**	**30**	**34**		

Table No.2.4.5: Domain wise Categorization of Semester Project–III and POs–PSOs Mapping

Sr. No.	Project Areas	No. of Capstone projects			Mapping with POs	Mapping with PSOs
		25-26	24-25	23-24		
1	Embedded Systems and IoT	15	13	19	PO1 to PO12	PSO-1, PSO-2
2	Biomedical and Healthcare Electronics	00	01	01	PO1 to PO12	PSO-1
3	Power Electronics and Renewable Energy Systems	05	04	01	PO1 to PO12	PSO-1
4	Robotics, Control and Automation	04	03	07	PO1 to PO12	PSO-1, PSO-2
5	Signal, Image and Video Processing	01	02	00	PO1 to PO12	PSO-1, PSO-2
6	Communication and Networking	00	00	01	PO1 to PO12	PSO-1, PSO-2
7	Artificial Intelligence and Data Analytics	03	01	00	PO1 to PO12	PSO-1, PSO-2
Total		**28**	**24**	**29**		

Through these experiences, students strengthen PSO-1, reinforcing Electronics and Telecommunication fundamentals, and PSO-2, enhancing competencies in software, digital, and embedded systems. Overall, semester projects ensure comprehensive POs–PSOs attainment, practical competence, and readiness for higher-level projects or professional challenges.

The projects under various domain are aimed at providing students with practical exposure to real-world problem solving using modern 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 semester projects Domain wise POs, PSOs and SDG Mapping

Domain Name: Artificial Intelligence and Data Analytics					
Project Name	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
Health Monitoring System using AI	Dr N L Lokhande	Safety, Ethics, Cost	Application	PO1 to PO12 PSO-1, PSO-2	SDG 3 SDG 9
AI based Road Damage Detection	Dr A B Jayaswal	Safety, Environment, Cost	Application	PO1 to PO12 PSO-1, PSO-2	SDG 9 SDG 11

Domain Name: Artificial Intelligence and Data Analytics					
Project Name	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
AI-powered Smart Traffic Light Using Emergency Vehicle Detection	Dr T H Jaware	Safety, Environment, Cost	Product	PO1 to PO12 PSO-1, PSO-2	SDG 11 SDG 3
Behavioral Cloning for Traffic Condition Specific Driving	Prof P R Bhole	Safety, Ethics	Research	PO1 to PO12 PSO-1, PSO-2	SDG 9 SDG 11
IoT based ECG monitoring system using AD 8232 sensor and ESP 8266	Prof P R Bhole	Safety, Ethics, Cost	Applicatio n	PO1 to PO12 PSO-1, PSO-2	SDG SDG 9
Personal ECG Tracking Device	Prof A B Jayaswal	Safety, Ethics, Cost	Product	PO1 to PO12 PSO-1, PSO-2	SDG 3 SDG 9

Domain Name : Signal, Image and Video Processing					
Project Name	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
Pest Detection Camera	Dr K H Sonawan e	Environment, Cost	Application	PO1 to PO12 PSO-1, PSO-2	SDG 12
AI-Based No-Contact Driver Drowsiness Detector	Prof M L Patel	Safety, Ethics	Product	PO1 to PO12 PSO-1, PSO-2	SDG 3 SDG 11
Automatic Number Plate Recognition	Dr R D Badgujar	Safety, Ethics	Application	PO1 to PO12 PSO-1, PSO-2	SDG 11 SDG 16

Domain Name : Signal, Image and Video Processing					
Project Name	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
Underwater Object Detection	Prof A B Jayaswal	Environment, Safety	Research	PO1 to PO12 PSO-1, PSO-2	SDG 14 SDG 9

Domain Name : Robotics, Control and Automation					
Project Name	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
LiDAR-Based Obstacle Avoidance System for a Rover	Dr M B Dembrani	Safety, Cost	Application	PO1 to PO12 PSO-1, PSO-2	SDG 9
CV-Based Lane Following for Autonomous Cars	Dr J B Jadhav	Safety, Ethics	Application	PO1 to PO12 PSO-1, PSO-2	SDG 11
Drone Obstacle Avoidance Using Deep Learning	Dr J P Patil	Safety, Ethics	Research	PO1 to PO12 PSO-1, PSO-2	SDG 9
Servo Motor Control for Robotic Arm	Dr S D Patil	Safety, Cost	Application	PO1 to PO12 PSO-1, PSO-2	SDG 9
Urban Heat Island Mapper	Dr B V Patil	Environment	Research	PO1 to PO12 PSO-1, PSO-2	SDG 11 SDG 13
Fire Fighter Robot using Arduino	Prof J P Patil	Safety	Product	PO1 to PO12 PSO-1, PSO-2	SDG 11
RC Boat Crafted Using PVC Pipes for Ganesh Visarjan	Prof M L Patel	Environment, Safety, Cost	Product	PO1 to PO12 PSO-1, PSO-2	SDG 14 SDG 12

Domain Name : Robotics, Control and Automation					
Project Name	**Guide Name**	**Key Factors (Environment / Safety / Ethics / Cost)**	**Type of Project**	**POs and PSOs Mapping**	**Mapping to SDG**
Hand Gesture Controlled Robot Car	Prof A B Jayaswal	Safety, Cost	Application	PO1 to PO12 PSO-1, PSO-2	SDG 9
Gesture Controlled Vehicle	Prof P R Bhole	Safety, Cost	Application	PO1 to PO12 PSO-1, PSO-2	SDG 9
GPS Guided Bluetooth Robot	Prof P M Goad	Safety, Cost	Application	PO1 to PO12 PSO-1, PSO-2	SDG 9
Smart Bridge Automatic Height Increase when Flooding	Kavita Patil	Safety, Environment	Product	PO1 to PO12 PSO-1, PSO-2	SDG 9 SDG 11
Under Water Robot	Prof V R Patil	Environment, Safety	Research	PO1 to PO12 PSO-1, PSO-2	SDG 14
Wi-Fi Talking Robot with Elderly Assistance	Prof S D Patil	Safety, Ethics	Product	PO1 to PO12 PSO-1, PSO-2	SDG 3 SDG 10
Human Following Robot using Arduino and Ultrasonic Sensor	Prof K H Sonawane	Safety	Application	PO1 to PO12 PSO-1, PSO-2	SDG 9
Motion Activated Tap Water Flow Circuit	Dr P G Patil	Environment, Cost	Product	PO1 to PO12 PSO-1, PSO-2	SDG 6 SDG 12
LiDAR-Based Obstacle Avoidance System for a Rover	Dr M B Dembrani	Safety, Cost	Application	PO1 to PO12 PSO-1, PSO-2	SDG 9

At the same time, these projects enhance PSO-1 by applying core EandTC concepts and strengthen PSO-2 through proficiency in software, intelligent algorithms, and embedded platforms, thereby improving industry readiness and system-level competence. 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 Electronics and Telecommunication Engineering. Conducted for 2–3 subjects as a key component of teacher assessment, this activity aims to enhance student's 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:

- Announce the 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 Question and Answers.
- 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 highlights the course-wise presentation topics along with their corresponding POs and PSOs mapping.

Table No.2.4.7: Sample Mapping of Presentation Topics for A.Y. 2025-26

Presentation Topic	Course	POs Mapping	PSOs Mapping
File-Attributes and Operations.	Operating Systems	PO1, PO2, PO5, PO10, PO12	PSO-2
Memory mapped files and allocation.	Operating Systems	PO1, PO2, PO3, PO5, PO10, PO12	PSO-2
6G Wireless Communication: Vision, Challenges, and Applications	Wireless Communication	PO1, PO2, PO4, PO5, PO6, PO7, PO12	PSO-1
Internet of Things (IoT) in Smart Cities and Industrial Automation	IoT / Embedded Systems	PO1, PO2, PO3, PO5, PO6, PO7, PO9, PO10	PSO-1, PSO-2

Presentation Topic	Course	POs Mapping	PSOs Mapping
Embedded Systems for Autonomous and Smart Devices	Embedded Systems	PO1, PO2, PO3, PO5, PO9, PO10, PO11	PSO-1, PSO-2
Optical Fiber Communication and Photonic Integrated Circuits	Optical Communication	PO1, PO2, PO4, PO5, PO6, PO12	PSO-1
Edge Computing and Fog Computing for Real-Time Applications	IoT	PO1, PO2, PO3, PO5, PO6, PO7, PO10	PSO-2
VLSI Design Trends and Low-Power Semiconductor Technologies	VLSI Design	PO1, PO2, PO3, PO5, PO6, PO7, PO12	PSO-1 PSO-2

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 Outcome-Based Education (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.

Table 2.5.1 presents a comprehensive overview of student projects implemented in the Department of Electronics and Telecommunication Engineering, highlighting the integration of course-based learning with real-world applications. The table captures 10 representative projects across domains such as IoT, Embedded Systems, Smart Cities, Healthcare, Agriculture, and Education. Each entry maps the project to the relevant POs and COs demonstrating alignment with the OBE framework.

Table 2.5.1 reflects how department-level projects contribute to:

- POs and COs 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 and Well-being), SDG 6 (Clean Water and Sanitation), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action).
- Hands-on learning and innovation: Students acquire practical skills in IoT, embedded systems, data analytics, smart monitoring, and automation.
- 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 with POs and PSOs

Sr. No	Topic	Course Code	POs Mapped	Description of Case /Real life Example	Industry / Organization Involved	Application Area/ Domain	Learning Outcome / Insight	Assessment Method Used	Reference / Source
1	All-in-One STEM Box	C301 C405	PO1 to PO12, PSO1,PSO2	Integrated kit to teach sensors, actuators, and basic electronics to school students	Local schools	Education / STEM Learning	Hands-on understanding of electronics and programming	Project Demo, Quiz	Internal Lab Design
2	Smart Fire Detection and Alert System	C407 C405	PO1 to PO12, PSO1, PSO 2	IoT system to detect fire and alert via SMS/mobile app	Fire Safety Companies / IoT Labs	Safety / Smart Buildings	Application of sensors and alert protocols	Prototype Testing, Report	IoT Articles
3	IoT-Based Air Quality Monitoring System for Smart Cities	C413 C405	PO1 to PO12, PSO1, PSO2	Sensor-based monitoring of air pollutants and real-time reporting for city management	Smart City Projects / Pollution Boards	Environment / Smart City	Data acquisition, analytics, and cloud integration	Simulation and Field Testing	Environmental Monitoring Reports
4	Street Weather station	C301 C407	PO1 to PO12, PSO1, PSO2	Standalone weather station monitoring temperature, humidity, rainfall in local areas	Meteorological Dept / Startups	Weather Monitoring / IoT	Sensor interfacing, data logging, real-time visualization	Prototype Demo	Open Source Weather Projects
5	Birth Counter	C301 C413	PO1 to PO12, PSO1, PSO2	Device to record and count new born in Shirpur hospital	Hospitals	Healthcare / Automation	Microcontroller programming and sensor integration	Functional Testing	Case Studies in Health Automation

Sr. No	Topic	Course Code	POs Mapped	Description of Case /Real life Example	Industry / Organization Involved	Application Area/ Domain	Learning Outcome / Insight	Assessment Method Used	Reference / Source
6	Smart Waste Monitoring System using IoT	C407 C405	PO1 to PO12, PSO1, PSO2	IoT-enabled bins to detect fill level and optimize collection routes	Municipal Corporations / IoT Startups	Waste Management / Smart Cities	IoT communication, optimization algorithms	Field Deployment	Smart City Reports
7	Water Quality Index Measurement	C301 C405	PO1 to PO12, PSO1, PSO2	Real-time measurement of water parameters like pH, turbidity, TDS in Rural Area	Water Authorities / Environmental Labs	Water Monitoring	Sensor calibration, data acquisition, analytics	Lab and Field Testing	Environmental Journals
8	IoT-Based Smart Parking Management System	C413 C407	PO1 to PO12, PSO1, PSO2	IoT sensors to detect parking slots and provide mobile app updates	Municipal Corporations / Smart City Vendors	Transportation / Smart Cities	IoT deployment, mobile app integration	Simulation and Demo	Case Studies in Smart Parking
9	Intelligent Home Security System using IoT and Mobile Application	C301 C407	PO1 to PO12, PSO1, PSO2	Motion, door, and fire detection integrated with mobile app alerts	Security Firms / Startups	Home Automation / Safety	Embedded programming, IoT networking, mobile integration	Prototype Testing	IEEE IoT Publications
10	Smart Agriculture Monitoring System using IoT	C301 C407	PO1 to PO12, PSO1, PSO2	Soil moisture, temperature, and climate monitoring for optimized irrigation	Agri-Tech Firms / Farmers	Agriculture / IoT	Sensor networks, decision-making algorithms for irrigation	Field Testing and Analysis	AgriTech Journals

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

Institute Marks : 10.00

The Department of Electronics and Telecommunication Engineering at R. C. Patel Institute of Technology (RCPIT), Shirpur actively promotes SWAYAM, NPTEL, and other recognized MOOCs 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
1	Core Electronics	Ability to analyze, design, and test analog and digital electronic circuits using fundamental principles of electronics and semiconductor devices.	PO1, PO2, PO3; PSO1
2	Communication Engineering	Design and analysis of analog and digital communication systems for reliable information transmission over wired and wireless channels.	PO1, PO2, PO3, PO4; PSO1
3	Signal Processing	Processing, analysis, and interpretation of signals using time and frequency domain techniques for real-world applications.	PO1, PO2, PO4; PSO1, PSO2
4	Embedded Systems and IoT	Design and implementation of embedded systems integrated with sensors, actuators, and IoT platforms for smart applications.	PO1, PO2, PO3, PO5; PSO1, PSO2
5	Computer and Programming	Development of algorithmic thinking, programming skills, and software solutions using modern programming languages and tools.	PO1, PO5, PO12; PSO1, PSO2
6	Control Systems and Automation	Modelling, analysis, and control of dynamic systems using controllers for automation and industrial applications.	PO1, PO2, PO4; PSO2
7	Networking and Security	Understanding of network architectures, protocols, and security mechanisms for reliable and secure data communication.	PO1, PO2, PO5, PO6; PSO1
8	Microwave, RF and Antenna	Design and analysis of RF circuits, antennas, and microwave systems for high-frequency communication applications.	PO1, PO2, PO3; PSO1
9	Optical and Photonics	Knowledge of optical communication, fiber optics, and photonic devices for high-speed data transmission.	PO1, PO2; PSO1

Sr. No.	Name of the Module	Skill Gained	Relevance to POs and PSOs
10	Artificial Intelligence and Data Science	Development of intelligent algorithms for data analysis, pattern recognition, and decision-making in engineering systems.	PO1, PO2, PO4, PO5; PSO2
11	Power, Energy and Green Technology	Understanding of energy-efficient systems, renewable energy technologies, and sustainable engineering practices.	PO1, PO6, PO7; PSO2
12	Biomedical Electronics	Design and application of electronic systems for biomedical instrumentation and healthcare monitoring.	PO1, PO2, PO6; PSO2
13	Industry 4.0 and Emerging Technologies	Exposure to cyber-physical systems, automation, AI, and digital transformation in modern industries.	PO1, PO5, PO6, PO12; PSO1, PSO2
14	Professional and Interdisciplinary Studies	Development of professional skills including ethics, teamwork, communication, and multidisciplinary knowledge.	PO8, PO9, PO10, PO11; PSO1 and PSO2
15	Project and Skill Development	Ability to apply engineering knowledge to solve real-world problems through projects, innovation, and research.	PO2, PO3, PO4, PO9, PO12; PSO1, 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

Academic Year	2022-23	2023-24	2024-25
No. of Certifications	309	202	260

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 Code Chef are actively used to enhance student's problem-solving ability, programming skills and algorithmic thinking through regular practice, contests, and peer learning, directly supporting analytical and computational competencies.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, IEEE facilitates self-learning through technical talks, workshops, coding events, webinars, and professional networking, exposing students to emerging technologies and best industry practices. Collectively, these facilities effectively support OBE and fosters lifelong learning.The institute provides Virtual Laboratory (VLAB) facilities to strengthen the scope of self-learning beyond regular classroom and laboratory hours. Virtual Labs allow students to independently perform simulated 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 department delivered industry-oriented embedded and IoT solutions to Dolphin Labs Embedded Systems OPC Pvt. Ltd., Pune through its channel partner Thorat Agency, Kolhapur. Student projects addressed real-world industrial and agricultural challenges such as precision liquid filling, smart irrigation, adaptive food processing, and IoT-based agriculture monitoring. These solutions improved automation accuracy, energy efficiency, connectivity reliability, and sustainability, while strengthening industry–institute collaboration and hands-on learning aligned with OBE.

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: Solving Complex Engineering Problems with Project Outcome and SDG Mapping

Problem Title / Scenario	**Course Name**	**PO Mapped**	**SDG**	**Description of Problem**	**Engineering Approach / Methodology**	**Tools / Technologies Used**	**Solution Proposed**	**Impact on Society / Environment**	**Assessment Method**
Precision Liquid Filling System using PID Control **Industry Solution**	Control Systems and IAC	PO1, PO2, PO3, PO4, PO5, PO11	SDG 9 SDG 12	Conventional liquid filling machines using fixed time-delay suffer from inaccurate volume dispensing due to pressure head variation as tank level decreases, leading to product wastage and inconsistent quality.	Feedback control system design using PID algorithm; real-time sensing of liquid level; dynamic adjustment of valve opening time based on flow variation derived from fluid mechanics principles.	Ultrasonic / Pressure Level Sensor, PLC Arduino, Solenoid Valve, PID Control Algorithm	Replacement of static timer-based control with level-compensated PID-controlled valve operation to ensure accurate 1-liter filling irrespective of tank level.	Reduces liquid wastage, improves packaging quality, minimizes manual intervention, enhances industrial efficiency Supports sustainable manufacturing practices.	Project report evaluation Working Model Demonstration Performance analysis
Irrigation Control Systems from 2G to 5G GPRS **Industry Solution**	Embedded Systems IoT Wireless Communication	PO1, PO2, PO3, PO4, PO5, PO7, PO11	SDG 2 SDG 6 SDG 9 SDG 12	The existing irrigation automation system failed due to 2G network sunset, causing loss of remote pump control and monitoring, leading to operational downtime and potential crop damage.	System re-engineering and technology migration Replacement of obsolete communication hardware Firmware refactoring for updated AT command sets Cloud-based monitoring integration for real-time control.	8051 Microcontroller 5G / LTE-M IoT Module (SIM7600 / SIM8200), Relay Module, High-gain 5G Antenna Cloud Dashboard, IoT SIM	Migration from 2G GSM-based communication to 5G-ready GPRS/LTE-M system enabling reliable, low-latency remote irrigation control and monitoring.	Ensures uninterrupted irrigation Conserves water through timely pump control Improves agricultural productivity Reduces manual field visits, and supports sustainable smart farming.	Project report evaluation Working Model Demonstration Performance analysis

Problem Title / Scenario	Course Name	PO Mapped	SDG	Description of Problem	Engineering Approach / Methodology	Tools / Technologies Used	Solution Proposed	Impact on Society / Environment	Assessment Method
Adaptive Vegetable Drying System using MOSFET Phase Control **Industry Solution**	Embedded Systems	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO11	SDG 2 SDG 7 SDG 9 SDG 12	Conventional vegetable dryers operate at a fixed temperature, causing nutrient loss, uneven drying, and excess energy Consumption when drying different types of vegetables with varying thermal requirements.	Design of a power-electronic control system using MOSFET phase/PWM control Closed-loop temperature regulation with sensor feedback Adaptive voltage modulation based on user-selected drying profiles.	Power MOSFET, MicrocontrollerPWM/Phase Control Circuit Temperature Sensor Potentiometer/User Interface Heating Coil	Replacement of ON/OFF heating control with a MOSFET-based firing circuit to regulate heating coil voltage, enabling precise temperature control for different vegetables.	Improves food quality and nutritional retention Reduces post-harvest losses, lowers electricity consumption Supports sustainable food processing and preservation.	Working Model Demonstration Temperature stability analysis Energy efficiency
Smart Agriculture Monitoring System using IoT	Embedded Systems	PO1, PO2, PO3, PO5	SDG 2 SDG 6 SDG 9 SDG 12	Traditional irrigation practices lack real-time field data, leading to over-irrigation, water wastage, and suboptimal crop yield due to manual decision-making.	Design of IoT-based sensor network; real-time data acquisition of soil moisture, temperature, and Climatic parameters; rule-based decision-making for optimized irrigation scheduling.	Soil Moisture Sensor, Temperature and Climate Sensors, Microcontroller IoT Module, Cloud Platform, Mobile/Web Dashboard	An IoT-enabled monitoring system that provides real-time agricultural data and supports intelligent irrigation decisions for efficient water usage.	Enhances crop productivity, conserves water resources, reduces farmer workload, and promotes sustainable and data-driven agricultural practices.	Field testing sensor data analysis system validation

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

EandTC 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

Name of the Industry	MOU for	Activities Conducted
Kruxonomy Consulting Pvt. Ltd (Machine Hack)	• Delivery of AI/Data Science courses • Python for Data Computing and DS 101 • Faculty training (4-week orientation program)	• Semester-long AI/DS courses LMS-based student progress tracking.
Tessolve Semiconductor Pvt. Ltd	• Setup of Semiconductor Test Engineering Lab • Faculty training and Student placement support	• Establishment of TSTE Lab • Faculty Training • Technical Lectures • Student Assessment and Certification.
Zydus Life sciences Limited	• Provide industry interaction and real-time exposure to selected students. • Establish *"Zydus Inspire Model"* for structured training. • Bridge academic industry gap through *Industry Bridge Program (I2I Bridge)*. • Pre-placement counseling and personality development.	• Inspire Modules (GD, PI training). • Industry Bridge Program (I2I). • Continuous assessments and progress tracking.

Name of the Industry	MOU for	Activities Conducted
Ambetronics Engineers Pvt.Ltd	• Industry Academia Collaboration • Faculty Development Programs, technical sessions, power skills training • SME Connects, technical workshops, periodic assessments. • Joint Working Group for coordination • Recruitment of selected final-year students	• Technical and skill-based training for students. • Periodic assessments and assignments. • Recruitment/interview process for shortlisted candidates.
Case Point Private Limited	• Collaboration for training students in relevant technologies • Providing skill-based training, workshops, assessments • Recruitment support • Confidentiality, IP protection, termination clauses included.	• Technical and skill-based training for students. • Periodic assessments and assignments. • Recruitment/interview process for shortlisted candidates.

Name of the Industry	MOU for	Activities Conducted
Esamyak Software Pvt.Ltd	• Collaboration for training students in relevant technologies • Providing skill-based training, workshops, assessments • Recruitment support based on company requirements • Confidentiality, IP protection, termination clauses included.	• Technical and skill-based training for students. • Periodic assessments and assignments. • Recruitment/interview process for shortlisted candidates.
EagleByte Solutions Pvt Ltd	• Industrial training for students and faculty • Guest lectures from industry experts • Internships for TE and BE students • Participation in technical events, workshops, symposiums • Summer/Winter training opportunities • 3-year MoU validity. • Sponsored live projects for 3rd and final-year students	• Expert sessions and workshops on emerging tech • Live project execution and mentoring • Summer/Winter internship programs • Technical events participation • Career guidance and placement support.

Name of the Industry	MOU for	Activities Conducted
CodeQuotient Pvt.Ltd.	• Access to CodeQuotient Platform /courses online to all the students and teacher of the partner. • Online/On-Campus Training • Industrial training to selected students • Internship/Jobs to the selected students	• Enabled continuous learning and self-paced skill development through curated programming courses. • Conducted expert-led training sessions both online and on-campus covering key programming languages, software development practices, and emerging technologies.
Sunrise Mentors Pvt.Ltd. (Coding Ninja)	• Coding and technical skill development • Placement readiness training • webinars by industry experts • Coding tests	• Webinars • Coding events • Placement Assessment Test
Sorting Hat Technologies Pvt.Ltd. (CodeChef.)	• Periodic practice sessions and Assessment-based tests (for grading) shall be created by CodeChef for the students • Monthly report shall be sent to the College about the students' overall performance on CodeChef.	• Code Chef created and shared regular practice sessions and assessment-based coding tests with the college students. • These were designed to challenge students' problem-solving and coding skills periodically and provide a structured learning path.

Name of the Industry	MOU for	Activities Conducted
Campus Credential	• Aptitude and Technical Training • Pre-placement expert lectures (seminars/webinars). • Career guidance sessions. • Training students for placement. • Employability skills enhancement	• Aptitude Training Program and Assessment • Technical Placement Training and Assessment • Webinars/Seminars by experts. • Career Guidance Workshops. • LMS for placement preparation • Assessment of students for company
Code Quotient Private Limited	• Access to CodeQuotient Platform /courses online to all the studentsand teacher of the partner. • Online/On-Campus Training • Industrial training (Summer/Winter) to selected students • Internship/Jobs to the selected students	• Enabled continuous learning and self-paced skill development through curated programming courses. • Conducted expert-led training sessions covering key programming languages, software development practices, and emerging technologies.

Name of the Industry	MOU for	Activities Conducted
RPG Foundation	• Employability Skills Development under CSR initiative • Technical, soft skills and domain-based training. • Real-time case study–based training (Cloud, DevOps, Robotics, Agile, etc.). • Provide trainers, assessments and course content. • RCPIT provides infrastructure, staff, and batch coordination.	• Employability Training (Technical + Soft Skills). • Cloud Computing, Agile, DevOps Modules. • Industry Case-Based Training. • Student Assessments. • Continuous feedback and progress review.
Centum Foundation	• Orientation, screening and enrolment of students • Training in hybrid mode (300 hrs. total—online and offline) • Creating LMS, assessments, assignments, training reports. • Improving employability skills of beneficiaries. • Confidentiality, IP rights, compliance with law, liability, termination terms • RCPIT to provide training venue, mobilization, trainer support, attendance records, safe environment.	• Students orientation and screening • Online/offline skill development training • LMS-based assessments and progress tracking • Placement support for trained beneficiaries • Regular reporting, batch formation, trainer scheduling • Certificates issued after successful completion of Training

Name of the Industry	MOU for	Activities Conducted
R3 Systems India Private Limited	• Classroom-based technical training • Workshops, technical sessions, industry-oriented module • Continuous assessment and feedback • Expert sessions and guidance for employability • Joint review committee activities	• Classroom-based technical training • Workshops, technical sessions, industry-oriented modules • Continuous assessment and feedback • Mock Interviews/Resume Preparations for final year students
Infosys Limited (Springboard)	• Access to Infosys Springboard digital learning platform • CSR-based training initiative for students and faculty • FDPs on pedagogy, instructional design and emerging technologies • Non-commercial academic use only • 5-year validity, confidentiality and data privacy agreements.	• Expert sessions and workshops on emerging tech • Live project execution and mentoring • Summer/Winter internship program • Technical events participation • Career guidance and placement support.

Name of the Industry	MOU for	Activities Conducted
MakeMyCareer – WCF	• Training under Make My Career Program for underprivileged graduates • Domain knowledge, soft skills, project work, case studies • WCF responsible for training delivery; RCPIT for mobilisation and attendance (85%) • Branding and CSR promotion guidelines	• Student identification and enrolment • Online/offline skill-based training • Project-based learning and assessments • Career readiness sessions • CSR publicity as per WCF guidelines.
CodeChef	• Periodic practice sessions and Assessment-based tests (for grading) shall be created by CodeChef for the students and shared regularly with the College. • Monthly report shall be sent to the College about the students' overall performance on CodeChef.	• CodeChef created and shared regular practice sessions and assessment-based coding tests with the college students. • These were designed to challenge students' problem-solving and coding skills periodically and provide a structured learning path.

Name of the Industry	MOU for	Activities Conducted
Effective German Academy	• Conduct German Language Training for RCPIT students. • Prepare students for ALTE German Proficiency Test. • Training schedule: 16 weeks / 180+ hrs • RCPIT to provide classroom availability, holiday calendar, and admin support • One-time study material provide Webinar for awareness of German Language	• Conducting German Language A1 and A2 classes • Preparation for A1 and A2 proficiency exam. • Regular assessments during training. • Opportunities for internships, advanced training, and German related career guidance
Yen Academy	• Conduct Japanese Language Training for JLPT N5 and N • Prepare RCPIT students for JLPT N5 and N4 Exam • Training duration: 16 weeks / 150+ hrs • RCPIT to provide class schedule, holiday calendar, admin support • One-time study material provided Webinar for awareness of Japanese Language	• Japanese Language N5 and N4 Classes. • JLPT N5 and N4 exam preparation sessions. • Continuous assessments and study material distribution. • Opportunities for internships, advanced training, and Japan related career guidance

Name of the Industry	MOU for	Activities Conducted
Admission Labs Germany	• Guiding and assisting students interested in pursuing Higher education in Germany. • Documentation and application support • Assisting VISA documentation etc.	• Webinar for parents on Financial Assistance for Overseas Education – Organized by Admission Labs, Germany • Online session on Alumni Insights and Success Stories -by Admission Labs, Germany
Powerhouse Global Services	• To promote internationalization , academic exchange • To establish strategic partnership to deliver TNE program.	• Session by COO Mr. Krishna Patil in Converges'25 World Education Fair at Nashik organized by Powerhouse Global Services

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 represents the industry collaborations along with their impact analysis and mapping with relevant POs and PSOs, reflecting the department's commitment towards OBE.

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

Industry Name	Impact Analysis	Mapped POs / PSOs
Kruxonomy Consulting Pvt. Ltd (Machine Hack)	• The MoU enhanced AI, data analytics, and programming competencies using modern tools.	PO1, PO2, PO5, PSO2
Tessolve Semiconductor Pvt. Ltd	• The MoU strengthened semiconductor testing knowledge through hands-on laboratory exposure.	PO1, PO4, PO5, PSO2
Zydus Life Sciences Ltd	• The MoU improved industry exposure, professional skills, and employability of students.	PO6, PO8, PO10
Ambetronics Engineers Pvt. Ltd	• The MoU enhanced applied electronics skills and industry readiness.	PO1, PO2, PO5

Industry Name	Impact Analysis	Mapped POs / PSOs
Case Point Pvt. Ltd	• The MoU improved technical competence and job readiness through skill-based training.	PO2, PO5, PO11
Esamyak Software Pvt. Ltd	• The MoU strengthened programming proficiency and analytical thinking.	PO1, PO2, PO5, PO12
EagleByte Solutions Pvt. Ltd	• The MoU promoted experiential learning through internships and live industry projects.	PO3, PO5, PO9, PSO2
CodeQuotient Pvt. Ltd	• The MoU enabled continuous learning and coding skill development through online platforms.	PO1, PO5, PO12
Sunrise Mentors Pvt. Ltd (Coding Ninjas)	• The MoU enhanced coding ability and placement preparedness.	PO2, PO5, PO11
Sorting Hat Technologies Pvt. Ltd (CodeChef)	• The MoU improved problem-solving and competitive programming skills through regular assessments.	PO2, PO5, PO12
Campus Credential	• The MoU strengthened aptitude, technical skills, and employability.	PO1, PO5, PO10
RPG Foundation	• The MoU enhanced employability through industry-relevant technical and soft skill training.	PO6, PO8, PO10, PO12
Centum Foundation	• The MoU improved skill development, assessment-based learning, and placement support.	PO5, PO7, PO10
R3 Systems India Pvt. Ltd	• The MoU strengthened industry-oriented technical skills and career readiness.	PO1, PO2, PO5, PO9
Infosys Ltd (Springboard)	• The MoU promoted digital skills, faculty up skilling, and lifelong learning.	PO5, PO12,
MakeMyCareer – WCF	• The MoU enhanced career readiness of underprivileged students through project-based learning.	PO6, PO8, PO10

Industry Name	Impact Analysis	Mapped POs / PSOs
Effective German Academy	• The MoU improved global employability through foreign language proficiency.	PO8, PO10, PO12
Yen Academy	• The MoU developed Japanese language skills for international career opportunities.	PO8, PO10, PO12
Admission Labs Germany	• The MoU facilitated opportunities for higher education abroad through structured guidance.	PO8, PO10
Powerhouse Global Services	• The MoU strengthened international exposure and global academic collaboration.	PO8, PO10

Table No.2.8.3: Industry Visit, Gap Addressed and relevance to POs-PSOs

Name of the Industry	Date	Percentage of students Participated	Gaps Addressed	Impact Analysis
Sivananda Electronics Ltd. Devlali, Nashik	07/11/25	109 (100 %)	• Bridged the gap between theoretical knowledge and real-time industrial practices. • Exposure to manufacturing workflows, testing standards, quality assurance methods, and product development cycles. • Improved understanding of industrial electronics and instrumentation systems used in professional environments.	PO1 PO5 PSO1 PSO2

B. Industrial Guest Lectures

The EandTC Department organized a series of expert lectures, national-level webinars, and MIC-driven innovation and IPR activities 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

Resource Person with Designation	Title/Topic Addressed	Date	Number of students Participated	Gaps Addressed	Impact Analysis
Hon'ble Prime Minister Shri Narendra Modi	Launch of "Viksit Bharat@2047: Voice of Youth"	11-Dec-2023	500+	Low awareness of national vision and civic responsibility	PO6, PO7, PO9, PSO2
Mr. Arjun Malhotra, Co-Founder, HCL Group	Innovation and Entrepreneurship Outreach Program in Schools/Community	22-Dec-2023	300+	Limited exposure to innovation leadership	PO1, PO2, PO10, PSO1
Mr. Arjun Deshpande, Founder and CEO, Generic Aadhaar	My Story – Motivational Session by Successful Innovators	21-Jan-2024	150	Lack of entrepreneurial exposure	PO3, PO9, PO12, PSO1
Dr. Yogesh Fulpagare, Product Manager, Cooler Master Corporation, Taiwan	Process of Innovation Development	24-Feb-2024	200	Gap in innovation lifecycle understanding	PO1, PO3, PSO1
Mr. Dipen Sahu, Innovation Officer, Ministry of Education's Innovation Cell	The Guiding Framework for Creating and Engaging Trained Faculty and Student IIC Members as Innovation Ambassadors (IA) in IIC Institutions	29-Jul-2024	200+	Limited clarity on Innovation Ambassador framework	PO9, PO11, PSO2
Mr. Dipen Sahu, Innovation Officer, Ministry of Education's Innovation Cell	Strengthening IIC Linkages with ATLs and SICs in Schools and Framework for Providing Mentorship Guidance	31-Jul-2024	200+	Weak HEI–school innovation linkage	PO6, PO9, PSO2

Resource Person with Designation	Title/Topic Addressed	Date	Number of students Participated	Gaps Addressed	Impact Analysis
Mr. Dipen Sahu, Innovation Officer, Ministry of Education's Innovation Cell	Building the Pipeline of Quality Innovations and Start-ups in HEIs with Ecosystem Enablers by Creating and Managing YUKTI Innovation and IPR Repository (YIIR)	2-Aug-2024	300+	Low awareness of innovation repositories	PO2, PO11, PSO1
Mr. Dipen Sahu,	Orientation cum Refreshers Session on Institutions Innovation Council Objectives, Structure and Operation for IIC Institutions	5-Aug-2024	300+	Lack of clarity on IIC operations	PO6, PO12, PSO2
Mr. Subham Sughandi Founder – Marketing Mantra	Expert Lecture on National Startup Day	16-Jan-2025	80	Low awareness of startup ecosystem	PO3, PO10, PSO1
Dr. Jeeva B Assistant Professor, KITS	Protecting Intellectual Property Rights and IP Management for Start-ups and Technology Readiness Level	20-Mar-2025	70	Limited knowledge of IPR and TRL	PO2, PO4, PSO1
Dr. Sacha Wunsch-Vincent Head, Economics and Statistics Division	Inauguration of IP UTSAV and Celebration of World Creativity and Innovation Day	21-April-2025 (2 Hr)	100+	Limited exposure to global innovation frameworks	PO6, PO12, PSO1

Resource Person with Designation	Title/Topic Addressed	Date	Number of students Participated	Gaps Addressed	Impact Analysis
Prof. (Dr.) Unnat P. Pandit DPIIT, Ministry of Commerce and Industry, Government of India [MIC Driven]	Expert Talk during IP UTSAV on IP Awareness and Innovation for National Development	21-April-2025 (2 Hr)	100+	Low awareness of patent systems	PO2, PO11, PSO1
Prof. Gauri Gargate Faculty, IP Law and Management, IIT Kharagpur [MIC Driven]	Discover More with Design Registrations	22-April-2025 (2 Hr)	100+	Lack of knowledge on design registration	PO3, PO11, PSO1
Dr. Chakravarthy Professor and Dean, School of Design Innovation, Mahindra University [MIC Driven]	Importance of Design Protection and Case Studies of Protected Designs	22-April-2025 (2 Hr)	100+	Limited exposure to design protection cases	PO3, PO4, PSO2
Ms. Anooja Padhee Partner, KandS Partners	Copy That! Copyrights Uncovered	23-April-2025 (2 Hr)	100+	Poor understanding of copyright protection	PO6, PO8, PSO2
Dr. Hemant Khosla DPIIT, Ministry of Commerce and Industry, Govt. of India [MIC Driven]	Copyright Protection Mechanisms and Case Studies	23-April-2025 (2 Hr)	100+	Limited exposure to copyright enforcement	PO4, PO8, PSO2
Dr. Rahul Taneja Scientist B, Haryana State Council for Science, Innovation and Technology (Haryana)	Mark the Spot: Trademarks Talk	24-April-2025 (2 Hr)	100+	Low awareness of trademarks and GIs	PO2, PO11, PSO1

Resource Person with Designation	Title/Topic Addressed	Date	Number of students Participated	Gaps Addressed	Impact Analysis
Dr. Sripathi Rao Kulkarni Senior Principal Scientist, CSIR Innovation Complex – Mumbai [MIC Driven]	Session on “Significance of IP Protection and Commercialization”	25-April-2025 (2 Hr)	100+	Limited understanding of IP commercialization	PO3, PO11, PSO1
Dr. Dara Ajay Head – Technology Transfer Office, Intellectual Property Management Cell, IIT Madras [MIC Driven]	Patent to Product (सृजन्ता से समृद्धि)	26-April-2025 (2 Hr)	100+	Weak understanding of technology transfer	PO3, PO4, PSO1
Mr. Jai Veer Assistant Controller of Patents and Designs, DPIIT, Ministry of Commerce and Industry [MIC Driven]	Commercialization of Patents and Government Support Systems	26-April-2025 (2 Hr)	100+	Low awareness of government IP support	PO6, PO11, PSO2
Dr. Santosh Rane President IIC-SPCE, Former Dean Academics SPCE Mumbai,	National-level Webinar on “Lean Start Up Ecosystem”	21-Aug-2025 (2 Hr)	489	Limited knowledge of lean startup methods	PO3, PO4, PSO1
Prof. Dr. Sanjay L. Kurkute Founder and CEO – PRISM Technology Founder and CEO –	Expert Session on “Innovation and Start-up Ecosystem Enablers”	26-Aug-2025 (2 Hr.)	185	Low awareness of startup enablers	PO2, PO6, PSO1
Dr. Hemraj Kumavat Assistant Professor and IPR Expert	National Level Webinar on IPR Awareness: From Innovation to Patent Filing	29-Aug-2025 (2 Hr.)	800+	Limited understanding of patent filing	PO3, PO11, PSO1

Resource Person with Designation	Title/Topic Addressed	Date	Number of students Participated	Gaps Addressed	Impact Analysis
Prof. Jayesh Badane Assistant Professor, Gurumantra Vocational Training Institute, Dhule	My Story / Motivational Expert Session by Successful Innovators and Entrepreneurs	6-Nov-2025 (2 Hr.)	50	Lack of entrepreneurial motivation	PO9, PO12, PSO2
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	Limited exposure to AI and Industry 4.0 tools	PO3, PO4, PSO1
Dr Kolla Bhanu Prakash Professor, K L University	Recent Research Challenges in India and Foreign Universities	27 Dec 2022	100+	Lack of awareness of global research trends, proposal writing, and interdisciplinary research opportunities	PO1, PO2 PO4 PSO1 PSO2.
Dr. A. Balaji Ganesh, Dean RandD, Velammal Engineering College, Chennai	Importance of Patents and Filing Procedure	11 May 2022	100+	Lack of understanding about IPR, patent search, drafting, and filing process	PO1, PO2 PO4 PSO1 PSO2.
Mr. Saurabh Loya	Financial Assistance for Overseas Education – Admission Labs, Germany	02-01-2025	40	Limited awareness of overseas education funding and admission procedures	PO12
Mr. Goutham Sekaran	Galvanize – Walkthrough of Free IELTS and TOEFL Course	16-04-2025	60	Insufficient awareness of language proficiency requirements for overseas education	PO10, PO12

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 and 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 and 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. Table 2.8.5 represents Industry Awareness, and Training Activities with POs–PSOs Impact.

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 and PSOs)
DTDC Company Pre Placement Talk	25-03-2023	127	Limited awareness of logistics industry roles	PO1, PO10, PSO2
Overview of Just Dial Company	18-04-2023	40	Lack of exposure to service-based industry	PO1, PO9, PO10
Semiconductor Industry and Placement Process	20-06-2023	57	Insufficient knowledge of semiconductor domain	PO1, PO2, PSO1
Goddwin Company Working Profile	31-08-2023	154	Limited understanding of manufacturing workflows	PO1, PO5, PSO2
Netwin Company Orientation	08-12-2023	216	Gap in understanding company expectations	PO9, PO10
AI Driven Patent Search	02-12-2024	150	Lack of exposure to IPR and patents	PO4, PO12, PSO1
Automation Solution of Wipro PARI	15-02-2024	60	Limited knowledge of industrial automation	PO1, PO5, PSO2
Need of Automation in Core Industry	23-02-2024	158	Insufficient awareness of automation relevance	PO1, PO2, PSO2

Name of the Activity	Date	No. of Students	Gaps Addressed	Impact Analysis (POs and PSOs)
Product Based Information	26-02-2024	141	Gap in knowledge of product-based companies	PO10, PSO2
PLC-Automation for Industry	03-02-2024	20	Limited hands-on exposure to PLC	PO1, PO5, PSO2
Full Stack and PHP/.NET Training	15-03-2024	75	Skill gap in software technologies	PO5, PO10, PSO2
Pre Placement Talk on TCS NQT	04-03-2024	125	Lack of awareness of recruitment assessments	PO10, PO12
Cyber Security and Data Science Careers	04-05-2024	52	Limited awareness of emerging career domains	PO1, PO12, PSO1
Discussion on Programming Skills	07-05-2024	23	Weak programming fundamentals	PO1, PO2, PSO1
Zeal Manufacturing and Calibration Services	10-05-2024	65	Lack of exposure to calibration practices	PO1, PO5, PSO2
Pool Campus Drive Instructions	15-10-2024	186	Insufficient clarity on recruitment procedures	PO9, PO10
Skill Development Programe	11-08-2024	120	Need for overall skill enhancement	PO9, PO10, PO12
ENTECRES LABS – STEM and Robotics	10-03-2025	40	Limited exposure to STEM and robotics	PO1, PO5, PSO1
FOX Solution Company Information	29-10-2025	120	Lack of exposure to solution-based companies	PO10, PSO2
Bagla Group Company Information	26-11-2025	100	Insufficient understanding of core industry	PO1, PO10, PSO2

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. Table 2.8.6 represents Alumni Interaction and Its Impact on POs–PSOs Attainment.

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

Resource Person	Expertise Domain and Topic	Date	No. of Students	Gaps Addressed	Impact Analysis (PO–PSO Mapping)
Mr. Parthesh Gaikwad	Merchant Navy Career in Merchant Navy	18/01/23	120	Lack of career awareness	PO12
Mr. Kapil Dodani	VLSI and Semiconductor Industry	16/12/22	120	Limited awareness of VLSI careers	PO12, PSO2
Mr. Junaid Shaikh	Coding, Resume and Interview Skills	19/11/22	120	Gap in professional skills	PO2, PO10 PO12
Mr. Rakesh Rajput	Design Tools and Foreign Languages	19/11/22	120	Limited global skill awareness	PO5, PO12
Mr. Pramod Patel	Life After Graduation	19/11/22	120	Lack of career clarity	PO12
Mr. Vediya Raghuvanshi	InfyTQ Python Track	15/10/22	120	Limited practical exposure	PO2, PO3 PSO1
Sadhana Singh	Resume and Interview Skills	18/11/22	120	Gap in employability skills	PO9, PO10 PO12
Sunanda Kharagaria	Agile Project Management	15/10/22	120	Limited project management exposure	PO9, PO12
Mr. Mrugesh Patel	Future of 5G Technologies	03/04/23	120	Lack of domain clarity	PO2, PO3, PSO1.
Industry Experts	Data Engineering and Analytics	25/03/25	120	Limited industry exposure	PO2, PO12.

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 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.

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 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.
- 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

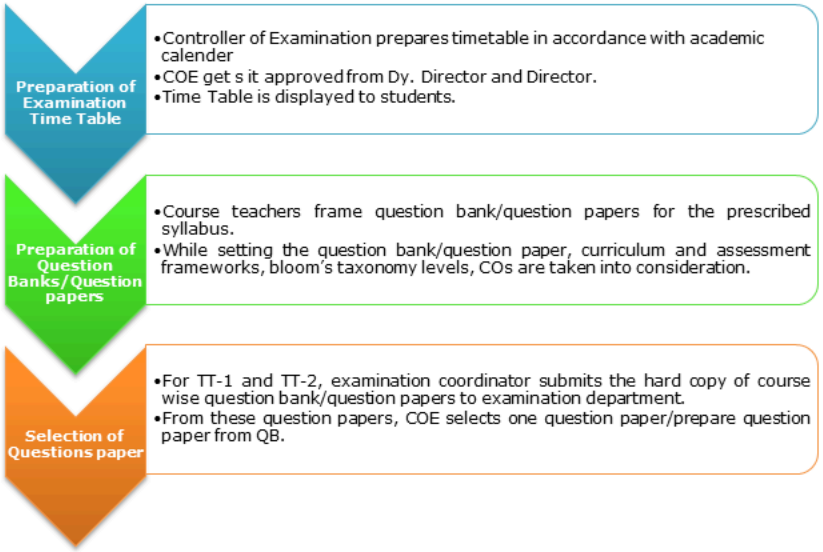


Figure 3.1.1: Term Test Examination Process Flow

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)

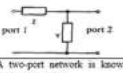
A.Y.-2023-24 – Department of Electronics & Tele Communication Engineering (T Y B Tech)				
ODD SEMSTER (SEM- I) TT-I (Marks-30)				
Subject- Radio Frequency Circuit Design (PCET50307)				
Day & Date- 27/10/2023, Friday		**Time**- 10.00 a.m. to 11.00 a.m.		
Q. No.	**All Questions are Compulsory**	**CO Mapped (Correlation Level)**	**Blooms' Level**	**Max. Marks**
Q.1	Find the ABCD matrix for the circuit shown below. 	CO4	L3	5
Q.2	A two-port network is known to have the following scattering matrix: $S = \begin{bmatrix} 0.25\angle 0^\circ & 0.75\angle -45^\circ \\ 0.75\angle 45^\circ & 0.3\angle 0^\circ \end{bmatrix}$ Determine if the network is reciprocal and lossless. If port 2 is terminated with a matched load, what is the return loss seen at port 1? If port 2 is terminated with a short circuit, what is the return loss seen at port 1?	CO4	L3	10
Q.3	Explain in detail, various assembly options for SMDs	CO1	L2	5
Q.4	Draw electric equivalent circuit of inductor working at high frequency, and Estimate the high frequency equivalent circuit parameters of inductor formed by N = 3.5 turns of AWG 36 copper wire on a 0.1 inch air core. Assume that the length of the coil is 0.05 inch. (radius of AWG 36 wire is = 2.7 mils, σ_{Cu} = 64.516 x 10^6 $\Omega^{-1}m^{-1}$)	CO1	L3	10

Table 3.1.5: Term Test-2 Examination Question Paper

R. C. PATEL
INSTITUTE OF TECHNOLOGY
(An Autonomous Institute)

A.Y.-2023-24 – Department of Electronics & Tele Communication Engineering (T Y B Tech)			
ODD SEMSTER (SEM- I) TT-II (Marks-30)			
Subject- Radio Frequency Circuit Design (PCET5030T)			
Day & Date- 7/12/2023, Thursday		Time- 10.00 a.m. to 11.00 a.m.	

Q. No.	All Questions are Compulsory	CO Mapped (Correlation Level)	Blooms Level	Max. Marks
Q.1	A load impedance $Z_L = (40 + j80)\ \Omega$ is connected to a 75 Ω transmission line of 4 cm length and operated at 2 GHz. Use the reflection coefficient concept and find the input impedance Z_{in} under the assumption that the phase velocity is 50% of the speed of light. Only use analytical approach to obtain solution.	CO2	L3	5
Q.2	Using the ZY Smith chart, determine the input impedance, Zin, at 850MHz of the network shown in figure below. The network consists of three lossless reactance, connected in a π-configuration, terminated by a load impedance (20−j15) Ω. 	CO2	L3	10
Q.3	Write short note on binomial Multi section Transformer. List the design steps for a Binomial matching network.	CO3	L1,L2	5
Q.4	Design L section matching network using Z smith chart to match a load impedance $Z_L = 80 - j40\ \Omega$ to a 50 Ω line working at frequency 1GHz.	CO3	L3	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:

- **Coding Platforms:** Performance and participation on reputed platforms such as LeetCode, CodeChef, HackerRank, and GitHub are assessed to enhance algorithmic thinking, coding proficiency, and competitive programming skills.
- **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 CodeVita, Smart India Hackathon (SIH), SAE events, Robocon, and other recognized offline Hackathons/Techfests 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 department uses a **Question Bank Management System (QBMS)** portal for preparing ESE question papers. The process is described below:

- **Constitution of Paper Setting Panel:** The Course-wise Paper Setting Panel is constituted by the Controller of Examinations (COE) from the panel provided by BOS through an Office Order.
- **Roles and responsibilities of Paper Setting Panel:**

Template Creator: The template creator discusses with the panel and finalizes the End Semester Examination (ESE) paper template, covering:

- Blueprint i.e. format and structure of the paper.
- Marks distribution and weightage as per module.
- Difficulty level distribution (Easy/Medium/Hard).
- Constructive alignment of questions with Course Outcomes (COs).
- The template follows Bloom's Taxonomy levels.

Author: Uploads questions, marking scheme and solutions in the portal. Each author contributes a minimum of **five questions per unit/module** aligned with the blueprint.

Reviewer: Reviewer verifies the quality, correctness and CO alignment of questions, marking scheme and solutions uploaded. If any discrepancy in a question is found, the reviewer reverts the question(s) back to the author for correction. After verification, the reviewer **seals the questions.**

This collaborative approach ensures variety, quality, and alignment in the final paper.

Auto-Generation of final ESE question paper

From the pool of sealed questions, the final question paper is automatically generated as per the blueprint. Figure 3.2.1 demonstrates the Process of Setting ESE Question Paper using QBMS Portal.

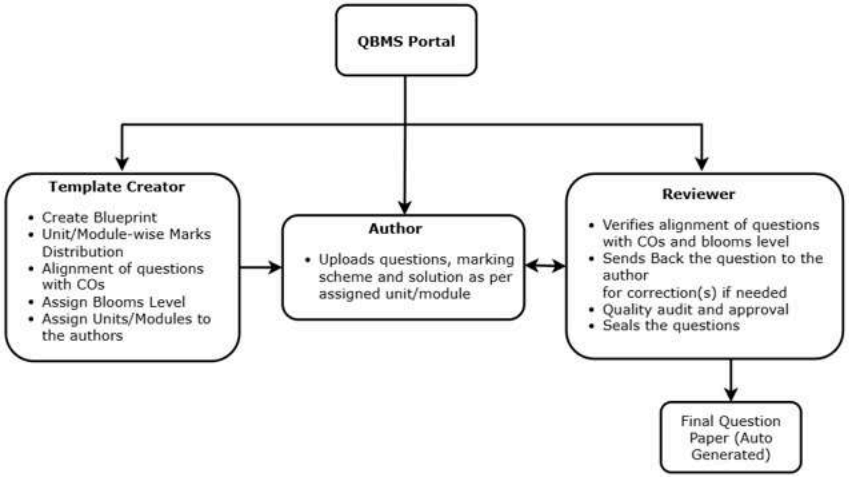


Figure 3.2.1: Process of Setting ESE Question Paper using QBMS Portal

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:

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

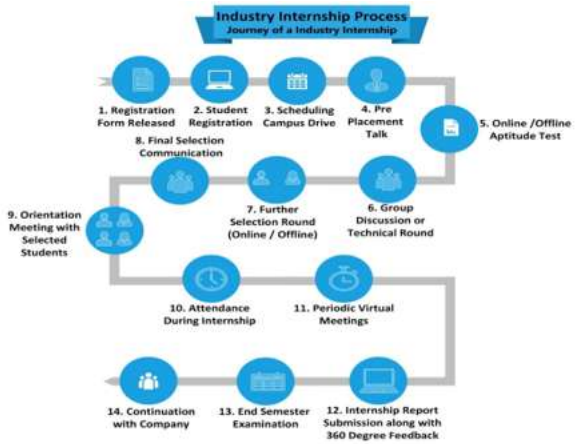


Figure 3.4.1: Flowchart of Industry Internship Process

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 is divided into two stages: Project Stage-I (Semester-VI) and Project Stage-II (Semester-VII). Table 3.5.1 outlines the activities to be completed in each stage as per the curriculum.

Table No.3.5.1: 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, 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 Electronics and Telecommunication 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.

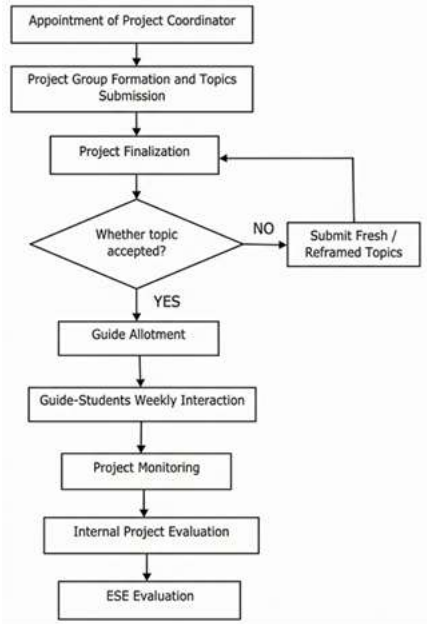


Figure 3.5.1: Process Flow for Project Topic Approval, Execution and Evaluation

- **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 Stage	Activities
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: 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 3.5.5 shows Continuous Monitoring of Project Stage-II (Semester VII).

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: 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 (30%) 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

Sr. No.	Activity	Tentative Period
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 Electronics and Telecommunication Engineering Department is committed to contributing toward the achievement of the United Nations Sustainable Development Goals (SDGs) through education, research, innovation, and social outreach. Electronics and Telecommunication engineers play a vital role in developing electronic systems, communication technologies, embedded solutions, and sensor-based applications that support sustainable development.

Faculty members guide students in identifying problem statements relevant to SDGs such as Quality Education, Good Health and Well-being, Clean Water and Sanitation, Affordable and Clean Energy, Sustainable Cities and Communities, and Climate Action.

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.Below is a summary of how departmental activities align with specific SDGs as shown in Table 3.6.1, supported by student projects from academic sessions 2023–24 and 2024–25 as per Table 3.6.2 and Table 3.6.3.

A. Evidence of Addressing Sustainable Development Goals (SDGs) in Electronics and Telecommunication Engineering Department

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

SN	SDG Goal	Evidence / Departmental Activities
1	SDG 2 – Zero Hunger	Student projects on smart agriculture, soil sensing, and crop monitoring using electronics and IoT techniques under faculty supervision.
2	SDG 3 – Good Health and Well-being	Development of health monitoring devices, biomedical instrumentation projects, assistive healthcare systems, and safety alert solutions as part of student projects.
3	SDG 4 – Quality Education	Implementation of Outcome-Based Education, project-based learning, laboratory experiments, and development of educational support systems such as digital notice boards and smart attendance.
4	SDG 5 – Gender Equality	Student projects addressing personal safety such as women safety alarm systems developed using embedded and communication technologies.
5	SDG 6 – Clean Water and Sanitation	Student projects on water quality monitoring, water level sensing, and pollution detection using sensors and embedded platforms.
6	SDG 7 – Affordable and Clean Energy	Projects related to solar energy systems, renewable energy-based charging stations, and energy monitoring using electronics and control techniques.
7	SDG 9 – Industry, Innovation and Infrastructure	Core Electronics and Telecommunication Engineering curriculum and projects focusing on embedded systems, communication networks, IoT, robotics, PCB design, and automation aligned with industry practices.
8	SDG 10 – Reduced Inequalities	Development of assistive and inclusive technologies such as readers for the visually impaired, sign language translators, and gesture-based communication devices.

9	SDG 11 – Sustainable Cities and Communities	Student projects on smart city components including traffic control, smart parking, surveillance, and urban safety monitoring systems.
10	SDG 12 – Responsible Consumption and Production	Projects on waste management systems, power consumption monitoring, and efficient resource utilisation using electronic and IoT solutions.
11	SDG 13 – Climate Action	Environmental monitoring projects related to air quality, noise pollution, weather monitoring, and disaster alert systems developed by students.
12	SDG 14 – Life Below Water	Student projects such as underwater robots, ROVs, and water quality monitoring systems focused on observation and data collection.
13	SDG 15 – Life on Land	Projects involving wildlife observation robots and environmental monitoring systems developed using sensing and communication technologies.
14	SDG 17 – Partnerships for the Goals	Industry-supported project problem statements, interdisciplinary project work, and institute-level collaborations contributing to student learning.

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

SN	Project Title	Related SDGs	Link with SDG Goals
1	IoT Based Weather Monitoring System	SDG 13	Enables climate-related data collection for awareness and local planning.
2	Walkie Talkie System for College Premises	SDG 9	Supports reliable communication infrastructure within an institutional setup.
3	Android Controlled Wildlife Observation Robot	SDG 15	Assists wildlife observation with minimal human interference in habitats.
4	Health Tracking Elbow for Athletes	SDG 3	Supports monitoring of physical health and injury prevention for athletes.
5	Mobile Controlled Electronic Massager	SDG 3	Promotes personal health and well-being through assistive electronic devices.
6	Self Driving Car	SDG 9	Demonstrates innovation in intelligent transportation and automation systems.
7	Industrial Waste Water Pollution Alert System	SDG 6, SDG 12	Detects water pollution to protect water resources and promote responsible industrial practices.

8	Dam Water Level Monitoring System	SDG 6	Supports effective water resource monitoring and management.
9	Emergency Medicine Delivery Using UAV	SDG 3	Improves access to emergency healthcare through rapid medicine delivery.
10	Audio Transmitter and Receiver for College	SDG 9	Strengthens basic communication systems for institutional use.
11	Electricity Generation Using Solid Waste	SDG 7, SDG 12	Generates energy from waste, supporting clean energy and waste utilisation.
12	Laser Engraver	SDG 9	Demonstrates advanced manufacturing and digital fabrication techniques.
13	EMG Controlled Prosthetic Hand	SDG 3, SDG 10	Supports healthcare and social inclusion of persons with disabilities.
14	Shape Based Object Sorting Robot	SDG 9	Supports automation and efficiency in industrial processes.
15	IoT Based Power Consumption Monitoring	SDG 7, SDG 12	Promotes energy efficiency and responsible electricity usage.
16	Balloon Watchdog Monitoring	SDG 9	Demonstrates sensor-based monitoring for safety applications.
17	Air, Noise and Weather Monitoring System	SDG 11, SDG 13	Supports sustainable cities through environmental monitoring and climate awareness.
18	Accident Alert with Fuel Cut-off using IoT	SDG 3	Enhances road safety through automated accident response mechanisms.
19	ECG Plotter	SDG 3	Enables basic cardiac health monitoring and diagnosis support.
20	3D Cube	SDG 4	Supports engineering education through hands-on learning models.
21	Low Cost Ventilator	SDG 3	Provides affordable respiratory healthcare solutions.
22	Water Monitoring Boat	SDG 6	Assists in monitoring water quality in natural water bodies.
23	3D Scanner	SDG 9	Supports digital design and reverse engineering applications.
24	Raspberry-Pi Based Reader for Blind	SDG 4, SDG 10	Enhances inclusive education and accessibility for visually impaired users.
25	PCB Engraving Machine	SDG 9	Supports electronics prototyping and manufacturing infrastructure.
26	Cordless Charging Pad	SDG 7	Encourages efficient and modern energy transfer methods.

27	Information Display System for College	SDG 4	Improves access to academic and institutional information.
28	TB and Covid-19 Monitoring using IoT	SDG 3	Supports public health monitoring and disease management.
29	Tree Climbing Robot	SDG 15	Assists in tree inspection and conservation-related activities.
30	Soil Nutrient Analysis and Crop Recommendation	SDG 2, SDG 12	Supports sustainable agriculture through efficient nutrient management.
31	Smart Agriculture Monitoring System	SDG 2, SDG 12	Improves agricultural productivity and responsible resource use.
32	Traffic Controlling Robot	SDG 11	Supports safer and more efficient urban traffic management.
33	IoT Based Fingerprint Door Locker	SDG 9	Enhances infrastructure security using embedded systems.

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

SN	Project Title	Related SDGs	Link with SDG Goals
1	Smart Agriculture System (College Premises)	SDG 2, SDG 12	Supports sustainable agriculture through monitored and efficient resource usage.
2	Wireless Digital Notice Board	SDG 4	Improves access to educational information through digital communication.
3	Automated Robotic Sorting System	SDG 9	Supports industrial automation and smart manufacturing practices.
4	3D Scanning Machine	SDG 9	Enables advanced manufacturing and digital design technologies.
5	Sign Language Translating Device	SDG 10	Promotes inclusion of hearing-impaired persons through assistive technology.
6	Fingerprint Based Vehicle Starter System	SDG 11	Enhances urban safety through secure vehicle access control.
7	Underwater Object Detection	SDG 14	Assists monitoring of underwater environments and objects.
8	Wireless Announcement System	SDG 9	Strengthens communication infrastructure using wireless technology.
9	Hand Gesture Vocalizer for Mute People	SDG 10	Enhances social inclusion through communication assistive devices.
10	Theft Proof Delivery Robot	SDG 9	Supports secure logistics using autonomous robotic systems.

11	Smart Cities Distribution and Water Quality Monitoring	SDG 6, SDG 11	Supports clean water access and sustainable urban infrastructure monitoring.
12	Floor Cleaner Robot with Self-Charging Station	SDG 9	Demonstrates autonomous systems and smart energy usage.
13	Wildlife Observation Robot using RF	SDG 15	Supports wildlife monitoring with minimal human intervention.
14	Solar EV Charging Station with Smart Parking	SDG 7, SDG 11	Promotes clean energy usage and sustainable urban mobility.
15	Intelligent Waste Management System	SDG 12	Encourages responsible waste handling and resource efficiency.
16	Solar Powered Vacuum Cleaner	SDG 7	Promotes renewable energy usage in household appliances.
17	Electric Vehicle Wireless Charging System	SDG 7, SDG 9	Supports clean energy transfer and EV infrastructure development.
18	ARM-7 Based Smart ATM Access System	SDG 9	Enhances secure financial infrastructure using embedded systems.
19	Face Recognition Security System	SDG 9	Improves infrastructure security through intelligent surveillance.
20	Guided and Autonomous Robot	SDG 9	Demonstrates autonomous navigation and robotic system design.
21	Automatic Seed Sowing and Spraying Robot	SDG 2, SDG 12	Supports sustainable farming through efficient agricultural automation.
22	Soldier Health and Position Tracking System	SDG 3	Supports health monitoring and safety of defence personnel.
23	Smart Attendance System using Face Recognition	SDG 4	Improves efficiency in educational administration and monitoring.
24	Vehicle Blackbox for Accident Data Storage	SDG 3, SDG 11	Supports road safety analysis and safer transport systems.
25	Wireless Floor Cleaner Robot	SDG 9	Demonstrates automation in domestic and service robotics.
26	Food Nutrient Monitoring System	SDG 2	Supports nutrition awareness and food quality assessment.
27	Vehicle Theft Detection System	SDG 11	Enhances urban safety and protection of personal assets.
28	Wind and Solar Powered Charging Station	SDG 7	Promotes renewable energy-based power solutions.

29	Surveillance Robot	SDG 11	Supports urban safety through automated surveillance systems.
30	Water Quality Detecting System	SDG 6	Supports monitoring and protection of clean water resources.
31	Health Tracking Smart Gloves	SDG 3	Supports personal health monitoring through wearable technology.
32	Design and Development of Ornithopter	SDG 9	Demonstrates innovation in bio-inspired engineering design.
33	Smart Vacuum Cleaner	SDG 9	Demonstrates smart appliance automation using embedded systems.
34	Waste Management, Energy Generation and Pollution Control	SDG 7, SDG 12, SDG 13	Supports waste-to-energy conversion and pollution reduction efforts.
35	Disaster Management System	SDG 11, SDG 13	Supports disaster preparedness and climate-resilient communities.
36	Underwater ROV	SDG 14	Supports exploration and monitoring of underwater environments.
37	Women Safety Alarm System	SDG 5, SDG 11	Enhances women safety and secure urban living through alert systems.

B. Published Research Supporting SDGs in Department of Electronics and Telecommunication Engineering

The student publications listed in Table 3.6.4 provide documented evidence of addressing Sustainable Development Goals (SDGs) through project-based research in the Electronics and Telecommunication Engineering Department. Publications related to healthcare systems, disease testing, and health monitoring demonstrate alignment with SDG 3 (Good Health and Well-being), while work on wireless charging systems supports SDG 7 (Affordable and Clean Energy). Research on autonomous and self-driving systems contributes to SDG 9 (Industry, Innovation and Infrastructure), and projects focused on educational information systems align with SDG 4 (Quality Education). The development of an underwater remotely operated vehicle supports SDG 14 (Life Below Water) through technological exploration of aquatic environments, and the unmanned ground vehicle for bomb disposal reflects applications aligned with SDG 11 (Sustainable Cities and Communities).

Table 3.6.4: Paper published in the session 2023-24

Paper Title	Name of the Publisher	Student Names	Project Guide	Name of the Journal / Conference	Volume and Issue	SDG Goal
Integrated Health Assessment System	iJournals Academic Publications	Bhoi Nandini Machchhindra, Bhoi Gaurav Dilip, Chavan Vyankatesh Bharat, Samsher Shaila Ravindra,	Dr P J Deore & K S Sagale	iJournals: International Journal of Software & Hardware Research in Engineering	Vol.12, Issue. 5	SDG 3 – Good Health and Well-being, SDG 9 – Industry, Innovation and Infrastructure

IoT Based Wireless Charging Center	Genesis Global Publication	Swaraj Sudhakar Patil, Yash Vijay Vaishyawani, Umesh Suresh Mali, Lalit Chandrakant Nikam	M L Patel	International Journal of Research Publication and Reviews	Vol.5, Issue. 5	SDG 7 – Affordable and Clean Energy, SDG 9 – Industry, Innovation and Infrastructur e,
Information Display System for College	Genesis Global Publication	Durgesh Jagannath Sonawane, Vaibhavi Nandkumar Patil, Mohit Shailesh Patil, Prerana Kishor Wani	V R Patil	International Journal of Research Publication and Reviews	Vol.5, Issue. 5	SDG 4 – Quality Education, SDG 9 – Industry, Innovation and Infrastructur e
Unmanned Ground Vehicle Bomb Disposal Robot	Genesis Global Publication	Divya Patil, Rajnandini Sonawane, Komal Chavhan, Mamta Girase	P M Goad	International Journal of Research Publication and Reviews	Vol.5, Issue. 5	SDG 16 – Peace, Justice and Strong Institutions, SDG 9 – Industry, Innovation and Infrastructur e
TB and Corona Testing Machines with Adding Leprosy Prediction System	Genesis Global Publication	Aakanksha Ravindra Sonawane, Jayesh Ravindra Sonawane, Kirti Bharat Mali, Kumud Ashok Pawar	P R Bhole	International Journal of Research Publication and Reviews	Vol.5, Issue. 5	SDG 3 – Good Health and Well-being, SDG 9 – Industry, Innovation and Infrastructur e
IoT Based Industrial Pollution Monitoring and Alert System	International Confernce on Advanced Technologies and Intelligent automation	Hitesh Vasudev Patil, Jayesh Narayan Patil, Umakant Sanjay Suryawanshi, Gaurav Uttam Bagul	M B Dembrani	ICATIA-24	-	SDG 13 – Climate Action, SDG 9 – Industry, Innovation and Infrastructur e

Gesture Controlled Mecanum Wheel Vehicle	GFs Godavari College of Engineering, Jalgaon.	Desale Pavan D, Jadhav Nilesh S, Mali Tejal R	N L Lokhande	International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-965128-8-0	-	SDG 9 – Industry, Innovation and Infrastructure,
Development of Color Based Product Sorting Machine	GFs Godavari College of Engineering, Jalgaon.	Patil Roshni, Tamaichekar Himanshu, Kashmiri Sabirhussain	P G Patil	International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-965128-8-0	-	SDG 9 – Industry, Innovation and Infrastructure, SDG 12 – Responsible Consumption and Production
Autonomous Robot for Cleaning System	GFs Godavari College of Engineering, Jalgaon.	Patil Manish R, Badgujar Bhushan A, Shinde Yashkumar R	P R Bhole	International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-965128-8-0	-	SDG 6 – Clean Water and Sanitation, SDG 11 – Sustainable Cities and Communities,

Voice Controlled Smart Lift	GFs Godavari College of Engineering, Jalgaon.	Nayan Shantaram Badgujar, Ankit Prakash Desale, Balraj Arun Girase	S D Patil	International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-965128-8-0	-	SDG 9 – Industry, Innovation and Infrastructure, SDG 10 – Reduced Inequalities,
Remote Controlled Weeder	GFs Godavari College of Engineering, Jalgaon.	Patil Sunil S, Thakur Yash B, Patil Prajwal S.	Dr T H Jaware	International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-965128-8-0	-	SDG 2 – Zero Hunger, SDG 9 – Industry, Innovation and Infrastructure
Smart Digital School Bell with Time Table Display	GFs Godavari College of Engineering, Jalgaon.	Mayur More, Priyanka Sonawane	V R Patil	International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-965128-8-0	-	SDG 4 – Quality Education,

Table 3.6.5: Paper published in the session 2024-25

Paper Title	**Name of the Publisher**	**Student Names**	**Project Guide**	**Name of the Journal / Conference**	**Volume and Issue**	**SDG Goal**

Monitoring Parameters of 3 Phase Motor	Genesis Global Publication	Bhagwan Gajanan Ahire, Machhindra Sanjay Shimpi, Leena Chhotulal Chaudhari, Vaibhav Kashinath Chaudhari	B V Patil	International Journal of Research Publication and Reviews	Vol.5, Issue. 6	SDG 9 – Industry, Innovation and Infrastructure, SDG 7 – Affordable and Clean Energy
Mountaineer Health and GPS Tracking Project	Genesis Global Publication	Tejas Satish Patil, Janhavi Anil Mali, Gitai Girish Bhagwat, Shridhar Pandit Pawar	S D Patil	International Journal of Research Publication and Reviews	Vol.5, Issue. 6	SDG 3 – Good Health and Well-being, SDG 9 – Industry, Innovation and Infrastructure
3 Dimensional Scanning System Using Distance Sensor	Genesis Global Publication	Piyush Suresh Patil, Harsh Bhausaheb Patil, Nikhil Rajendra Patil, Parimal Ramkrushna Salunke	S D Patil	International Journal of Research Publication and Reviews	Vol.5, Issue. 6	SDG 9 – Industry, Innovation and Infrastructure
Complete Self Driving Car	Genesis Global Publication	Nandini Vilas Patil, Umeshwari Shriram Badgujar, Kadambari Pravin Suryawanshi, Vaishnavi Kishor Baviskar	K H Sonawane	International Journal of Research Publication and Reviews	Vol.5, Issue. 6	SDG 9 – Industry, Innovation and Infrastructure, SDG 11 – Sustainable Cities and Communities
Laser Engraver	Genesis Global Publication	Kanhaiya R. Sonawane, Bhuvan S. Suryawanshi, Neha B. Chaudhari, Surbhi U. Marathe	P G Patil	International Journal of Research Publication and Reviews	Vol.5, Issue. 6	SDG 9 – Industry, Innovation and Infrastructure

PCB Engraving Machine	Genesis Global Publication	Sumit S. Patil, Nandini Behare, Abhilasha Borole, Parag Patil	J P Patil	International Journal of Research Publication and Reviews	Vol.5, Issue. 6	SDG 9 – Industry, Innovation and Infrastructure
Underwater ROV	Genesis Global Publication	Om Chavan, Jayesh Badgujar, Pranjal Rajput, Sanket Sonje,	N L Lokhande	International Journal of Research Publication and Reviews	Vol.5, Issue. 6	SDG 14 – Life Below Water, SDG 9 – Industry, Innovation and Infrastructure

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

The Electronics and Telecommunication Engineering Department promotes engagement with the United Nations Sustainable Development Goals (SDGs) through student-led technical activities organized under clubs such as RCPIT WINGS Club and Robo TEBM Club. These activities provide hands-on exposure to emerging technologies including UAVs, robotics, autonomous systems, and embedded electronics, complementing academic learning.

National-level events such as Technodium, Avitron, Robotron, Electroboat, and UAV training programs support experiential learning aligned with SDG 4 (Quality Education) and SDG 9 (Industry, Innovation and Infrastructure), while enhancing problem-solving, teamwork, and employability skills related to SDG 8 (Decent Work and Economic Growth). Activities focusing on autonomous and robotic systems also support applications in safety and smart mobility, contributing to SDG 11 (Sustainable Cities and Communities), and collaborative visits and competitions reflect SDG 17 (Partnerships for the Goals).

Table 3.6.6: Relevance of Cohort Supports to SDG Goal

Club Name	Activity / Event Name	SDG Goal	SDG Linkage
RCPIT WINGS Club	Technodium	SDG 4 – Quality Education	Provided hands-on technical learning beyond classroom instruction.
RCPIT WINGS Club	Avitron (1.0 and 2.0)	SDG 9 – Industry, Innovation and Infrastructure	Encouraged innovation through UAV-based technical challenges.
Robo TEBM Club	Robotron (1.0 and 2.0)	SDG 9 – Industry, Innovation and Infrastructure	Supported robotic system design and problem-solving skills.
Robo TEBM Club	Electroboat	SDG 11 – Sustainable Cities and Communities	Introduced concepts related to autonomous and smart mobility systems.
RCPIT WINGS Club	Aerobasics	SDG 4 – Quality Education	Strengthened understanding of basic aeronautical and electronic concepts.
RCPIT WINGS Club	Drone Workshop	SDG 4 – Quality Education	Enabled practical skill development in drone and control systems.

RCPIT WINGS Club	UAV Pilot Training and Research Institute Visit	SDG 4 – Quality Education	Provided exposure to UAV operation and research environments.
Robo TEBM Club	Startup Training and Institutional Visit	SDG 8 – Decent Work and Economic Growth	Enhanced awareness of entrepreneurship and employability skills.
Robo TEBM Club	World Robotics Competition	SDG 17 – Partnerships for the Goals	Promoted teamwork and inter-institutional collaboration.

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
			Term Test-2	30 (Scaled to 15|10)	Written test covering remaining syllabus; CO-mapped questions	Measures continuity of learning and higher cognitive levels
			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
			Course-Specific Case Study / Assignment	10|20	Application-oriented tasks aligned with lab outcomes	Evaluates analytical and problem-solving ability
		External	End Semester Examination (Lab)	25|50	Practical examination by internal/external examiners	Validates independent experiment execution and lab CO attainment

Sr. No.	Course Type	Assessment Category	Assessment Tool	Marks	Assessment Process	Relevance to CO Evaluation
Direct Assessment Tools						
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
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

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.

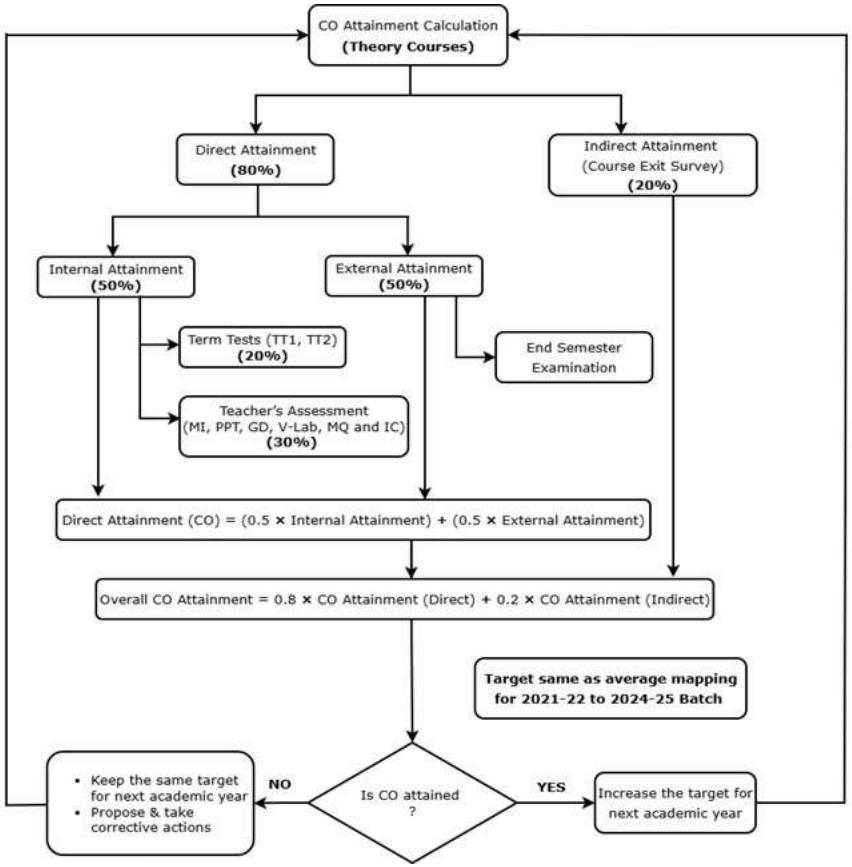


Figure 3.7.1: Course Outcome Attainment calculation Process for Theory Courses

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.

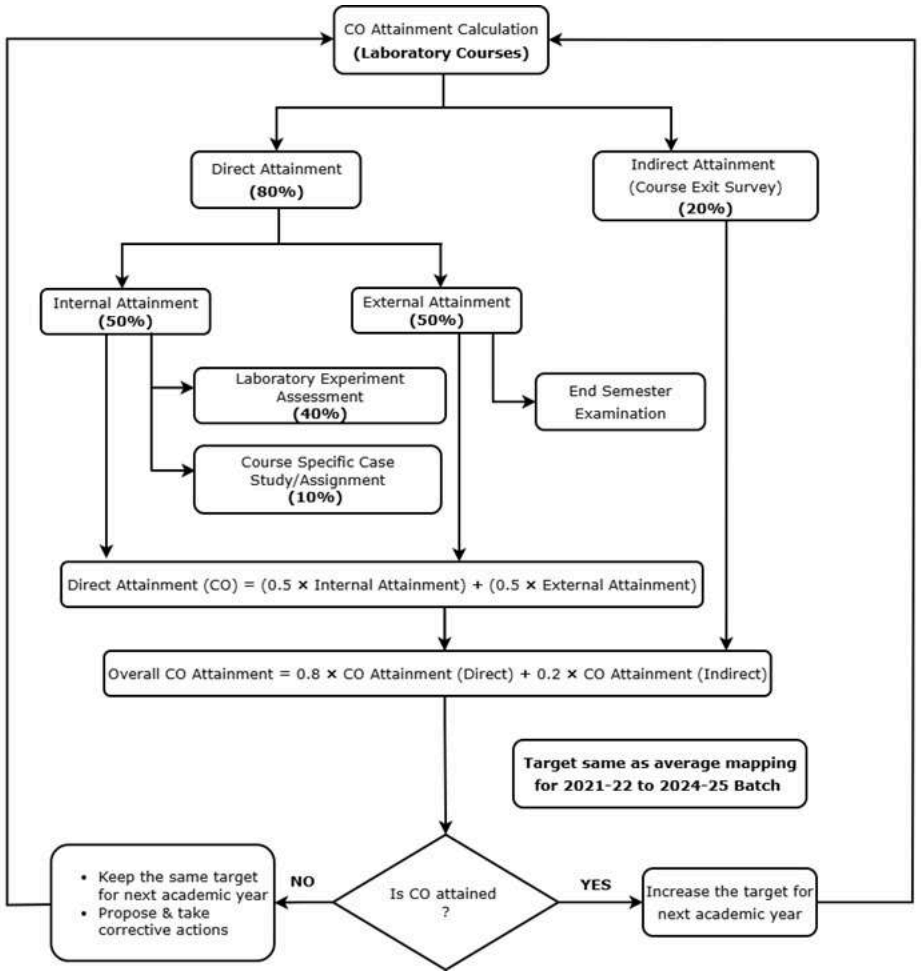


Figure 3.7.2: Course Outcome Attainment calculation Process for Laboratory Courses

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: CO Attainment for Batch 2021-22 to 2024-25

Course	CO1	CO2	CO3	CO4	CO5	CO6
C101	1.59	1.43	1.42	1.59	1.59	1.57
C102	1.46	1.47	1.27	1.28		
C103	1.83	1.82	1.64	1.65		
C104	1.84	1.84	1.83	1.80	1.66	1.60
C105	1.86	1.87	1.68	1.69	1.68	

C106	2.82	2.34	2.33	2.43		
C107	2.81	2.58	1.93	1.92	1.96	2.88
C108	2.82	2.83	2.80	1.85	1.84	
C109	2.35	2.45	2.48	2.47	2.46	
C110	1.41	1.37	1.42	1.58	1.59	1.60
C111	2.30	2.30	2.12	2.14		
C112	1.54	1.50	1.35	1.33		
C113	2.00	2.00	1.98	1.98	1.49	
C114	1.90	1.74	1.88	1.74	1.56	1.58
C115	1.97	2.07	2.12	1.99	2.06	1.83
C116	2.58	2.24	2.26	2.27		
C117	2.50	2.50	1.85	1.85	1.85	
C118	2.82	2.82	2.80	2.82	2.80	2.82
C119	2.46	2.47	2.48	2.47	2.78	2.77
C120	1.38	1.36	1.38	1.36	1.38	
C201	1.78	1.78	1.77			
C202	1.85	1.83	1.82	1.82		
C203	2.58	2.56	2.55	2.54		
C204	1.85	1.93	1.83	1.67	1.66	
C205	1.53	2.49	2.47	2.46	1.49	
C206	1.74	1.75	1.72	1.73	1.56	
C207	2.58	2.59	2.56	2.57	0.56	
C208	1.92	1.87	1.95	1.88		
C209	2.88	2.91	1.95	2.92		
C210	2.98	2.99	2.96	2.97	2	2.01
C211	2.94	2.95	2.96	2.96	2.97	
C212	1.60	1.63	1.47	1.64		
C213	1.84	1.76	1.90	1.74	1.57	
C214	2.97	2.97	2.96	2.95	2.95	
C215	1.85	1.84	1.84	1.83	1.68	
C216	1.61	2.57	2.56	2.56	2.56	
C217	1.71	1.72	1.70	1.58		
C218	2.98	2.98	2.97	2.97	2.97	
C219	1.81	1.81	1.83	1.62	1.61	
C220	2.56	2.56	2.57	2.57	2.58	

C221	1.37	1.39	1.37	1.38	1.34	1.37
C301	1.76	1.69	1.92	1.67	1.42	
C302	2.97	2.96	2.97	2.96	2.97	
C303	2.25	2.29	2.21	1.99	1.99	1.98
C304	2.97	2.97	2.96	2.95	1.99	1.98
C305	1.84	1.85	1.93	2.02	1.68	
C306	2.88	2.89	2.89	2.90	2.88	
C307	2.92	2.96	2.93	2.97	2.92	2.93
C308	2.39	2.09	2.50	2.56		
C309	2.82	2.82	1.99	2.64		
C310	1.77	1.93	0.95	1.90	1.94	
C311	2.94	2.94	2.95	2.94	2.95	
C312	1.38	1.36	1.32	1.35		
C313	1.84	1.82	1.88			
C314	2.18	2.16	2.18			
C315	1.90	1.75	1.86	1.76	1.60	
C316	2.14	2.15	2.15	2.16	1.20	
C317	1.84	1.84	2.00	1.82		
C318	2.64	2.96	2.96	2.94		
C319	1.84	1.70	1.70	1.53	1.54	
C320	2.64	2.66	2.66	2.65	2.66	
C321	2.41	2.26	2.42	2.33	2.11	
C322	2.97	2.98	2.98	2.97	2.99	
C323	2.97	2.98	2.97	2.98		
C324	2.98	2.95	2.97	2.98	2.99	
C325	2.01	2.02	2.02	2.15		
C326	2.97	2.98	2.98	2.95		
C401	2.40	2.40	2.40	2.41	2.25	
C402	2.96	2.96	2.97	2.97	2.98	
C403	1.90	1.83	1.83	1.84		
C404	2.98	2.99	2.98	2.96	2.96	
C405	1.91	1.96	2.09	2.04	1.76	
C406	1.80	2.80	2.80	2.76	1.81	
C407	2.95	2.97	2.97	2.98		
C408	2.95	2.95	2.96	2.96		

C409	2.96	2.98	2.98	2.99	2.96	
C410	2.90	2.82	2.72	2.74	2.48	
C411	2.90	2.81	2.90	2.89		
C412	1.88	1.86	1.79	1.78		
C413	2.74	2.63	2.64	2.56	2.40	
C414	2.65	2.56	2.59			
C415	2.99	2.98	2.95	2.96	2.93	

F. CO Attainment Calculation Sheet

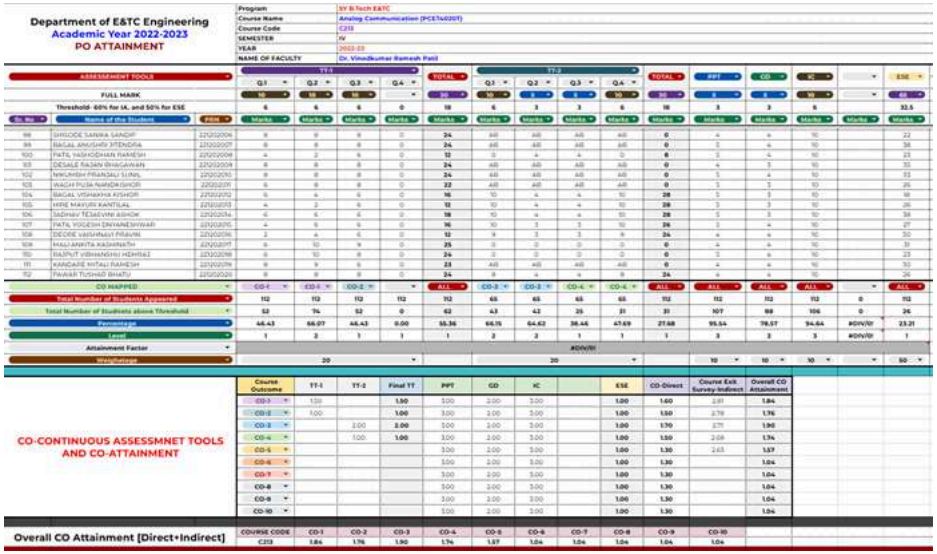


Figure 3.7.3: CO Attainment Calculation Sample Sheet-Theory Course

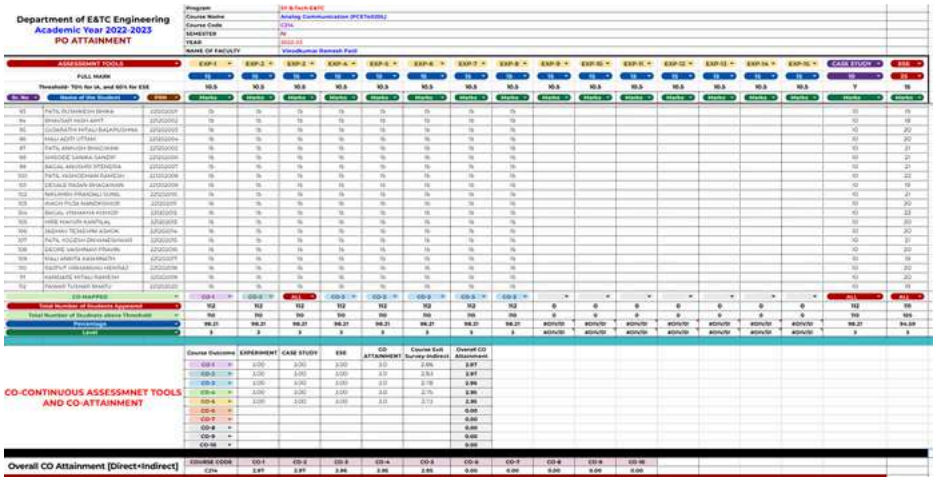


Figure 3.7.4: CO Attainment Calculation Sample Sheet-Lab Course

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	1.18	0.79	PO3	0.47	0.42	PO6	PO7	PO8	PO9	PO10	PO11	0.39
C102	0.85	0.33	PO3	0.33	PO5	PO6	PO7	0.33	0.33	0.33	PO11	0.33
C104	0.49	0.99	0.49	0.75	0.52	PO6	PO7	PO8	0.52	0.49	PO11	0.49
C105	1.48	0.99	0.49	0.49	PO5	PO6	PO7	PO8	PO9	0.49	PO11	PO12
C107	0.74	1.47	0.74	1.12	0.77	PO6	PO7	PO8	0.77	0.74	PO11	0.74
C108	2.32	1.55	0.77	0.77	PO5	PO6	PO7	PO8	PO9	0.77	PO11	PO12
C109	PO1	0.78	PO3	0.8	PO5	PO6	PO7	PO8	0.8	0.79	PO11	0.79
C110	1.15	0.77	0.40	0.47	0.42	PO6	PO7	PO8	PO9	PO10	PO11	0.38
C111	1.89	1.17	0.68	0.69	PO5	PO6	PO7	0.68	0.68	0.68	PO11	0.68
C113	0.56	0.72	0.72	0.75	0.75	PO6	0.40	0.40	0.40	1	0.40	0.80
C114	0.97	0.79	0.90	1.22	1.26	PO6	PO7	PO8	PO9	0.47	PO11	0.47
C115	PO1	0.60	PO3	0.60	0.59	PO6	PO7	PO8	0.63	1	PO11	0.60
C118	1.87	1.56	1.71	2.43	2.57	PO6	PO7	PO8	PO9	0.93	PO11	0.93
C117	0.64	0.85	0.85	0.87	0.87	PO6	0.53	0.53	0.53	1.12	0.53	1.07
C119	PO1	0.80	PO3	0.80	0.87	PO6	PO7	PO8	0.83	1.47	PO11	0.85
C201	1.50	0.83	0.50	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.50
C202	1.20	0.80	0.53	0.53	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.67
C203	1.88	1.25	0.83	0.83	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.04
C204	1.34	1.21	1.24	1.10	0.49	PO6	PO7	PO8	PO9	0.81	0.49	1.10
C205	1.76	1.60	1.70	1.44	0.67	PO6	PO7	PO8	PO9	1.04	0.67	1.44
C206	1.41	1.22	0.83	1.12	1.22	PO6	PO7	PO8	PO9	0.47	PO11	1.04
C207	2.50	2.08	1.25	1.88	2.08	PO6	PO7	PO8	PO9	0.83	PO11	1.88
C208	1.65	1.09	0.96	0.55	0.55	PO6	PO7	0.55	0.54	1.37	0.54	1.23
C209	2.60	1.73	1.49	0.87	0.87	PO6	PO7	0.77	0.83	2.12	0.83	1.88
C210	2.00	2.00	1.50	1.00	1.00	PO6	PO7	PO8	PO9	1.00	PO11	1.00
C211	2.00	1.80	1.80	1.60	1.50	2.00	2.00	1.40	2.00	1.40	1.75	1.80
C212	1.25	0.93	0.40	0.51	1.09	PO6	PO7	PO8	PO9	PO10	PO11	0.42
C213	1.52	1.52	1.11	1.01	0.51	PO6	PO7	PO8	PO9	0.51	PO11	0.51
C214	3.00	3.00	2.20	2.00	1.00	PO6	PO7	PO8	PO9	1.00	PO11	1.00
C215	1.25	0.95	1.04	0.72	0.51	PO6	PO7	PO8	PO9	PO10	PO11	0.84
C216	1.76	1.26	1.59	1.09	0.83	PO6	PO7	PO8	PO9	PO10	PO11	1.17

C218	1.80	2.00	2.20	2.20	2.60	1.00	PO7	1.00	2.00	2.20	1.80	1.50
C219	PO1	PO2	PO3	PO4	PO5	1.00	1.16	1.05	0.53	PO10	0.45	0.52
C220	1.67	1.50	1.50	1.33	1.25	1.67	1.67	1.17	1.67	1.17	1.46	1.50
C221	0.33	0.39	0.33	0.33	0.33	PO6	PO7	PO8	0.33	0.33	0.33	0.33
C301	1.07	0.89	1.19	1.55	1.55	PO6	0.52	PO8	PO9	0.68	0.52	0.47
C302	2.20	1.80	2.33	3.00	3.00	PO6	1.00	PO8	PO9	1.40	1.00	1.00
C303	1.55	0.75	0.64	1.20	1.00	PO6	PO7	PO8	PO9	0.85	0.60	0.83
C304	2.20	1.03	0.84	1.40	1.13	PO6	PO7	PO8	PO9	1.07	0.60	0.93
C305	1.60	0.76	1.21	0.54	0.53	PO6	PO7	PO8	PO9	PO10	0.60	0.58
C306	2.90	1.35	2.26	0.97	0.97	PO6	PO7	PO8	PO9	PO10	0.97	0.97
C307	PO1	PO2	PO3	PO4	1.00	3.00	2.00	3.00	2.50	2.83	3.00	2.33
C308	0.75	1.89	1.47	1.11	1.89	PO6	PO7	PO8	PO9	1.89	PO11	0.76
C309	0.83	2.03	1.60	1.22	2.03	PO6	PO7	PO8	PO9	2.03	PO11	0.80
C310	0.95	0.95	0.42	0.57	0.47	PO6	PO7	PO8	PO9	0.47	PO11	0.47
C311	3.00	2.33	2.33	2.33	3.00	3.00	3.00	3.00	2.00	2.00	1.00	2.20
C312	0.83	0.33	PO3	PO4	PO5	PO6	PO7	PO8	0.83	1.00	PO11	PO12
C313	1.24	0.71	0.53	0.53	0.71	PO6	PO7	PO8	PO9	PO10	PO11	1.07
C314	1.56	0.89	0.67	0.67	0.89	PO6	PO7	PO8	PO9	PO10	PO11	1.33
C317	1.38	1.12	1.70	1.12	1.70	PO6	PO7	PO8	PO9	1.12	0.57	1.12
C318	2.43	1.97	3.00	1.97	3.00	PO6	PO7	PO8	PO9	1.97	1.00	1.97
C321	1.71	1.67	1.47	1.42	0.71	PO6	PO7	PO8	PO9	0.72	PO11	0.72
C322	2.40	2.33	2.00	2.00	1.00	PO6	PO7	PO8	PO9	1.00	PO11	1.00
C323	1.50	2.00	1.00	1.25	1.00	PO6	PO7	PO8	PO9	1.00	1.00	1.00
C324	3.00	2.33	2.33	2.33	3.00	3.00	3.00	3.00	2.00	2.00	1.00	2.20
C325	1.23	1.55	1.07	0.63	1.30	PO6	PO7	PO8	PO9	0.62	0.63	0.62
C326	2.00	2.50	1.67	1.00	2.00	PO6	PO7	PO8	PO9	1.00	1.00	1.00
C403	1.63	1.09	0.83	0.54	1.60	PO6	PO7	PO8	PO9	PO10	PO11	0.85
C404	3.00	2.00	1.60	1.00	3.00	PO6	PO7	PO8	PO9	PO10	PO11	1.60
C405	1.65	1.30	1.48	1.78	1.48	PO6	PO7	PO8	1.55	0.52	0.52	0.59
C406	2.27	1.73	2.03	2.40	2.03	PO6	PO7	PO8	1.60	0.53	0.53	0.77
C407	2.00	2.75	1.25	2.25	2.00	2.00	2.00	2.00	PO9	2.00	1.00	1.75
C408	2.50	2.50	1.50	1.75	2.25	PO6	1.00	PO8	PO9	1.25	PO11	1.00
C409	3.00	2.33	2.33	2.33	3.00	3.00	3.00	3.00	2.00	2.00	1.00	2.20

C410	1.87	1.14	0.90	1.17	0.92	PO6	PO7	2.40	0.85	0.88	PO11	0.97
C411	2.88	2.88	2.63	2.39	2.39	PO6	PO7	PO8	PO9	1.68	PO11	2.88
C412	1.03	0.64	PO3	0.50	0.50	PO6	PO7	PO8	PO9	0.52	PO11	0.52
C415	3.00	3.00	1.50	2.00	2.00	3.00	2.00	3.00	1.50	2.00	1.00	3.00
C413	2.18	1.36	1.35	1.25	1.72	1.98	1.57	PO8	PO9	1.46	1.1	0.83
C103	0.71	0.77	0.45	0.48	PO5	PO6	0.45	PO8	PO9	0.48	PO11	PO12
C106	1.69	1.21	1.00	0.88	PO5	PO6	1.00	0.75	0.75	0.88	PO11	0.75
C112	0.61	0.61	0.35	0.35	PO5	PO6	0.32	PO8	PO9	0.38	PO11	0.32
C116	1.64	1.22	0.73	0.75	PO5	PO6	0.83	0.70	0.70	0.77	PO11	0.77
C120	0.67	0.67	0.67	0.53	0.33	PO6	0.33	PO8	0.33	0.33	0.33	0.67
C217	1.04	1.04	0.92	1.16	0.42	PO6	PO7	PO8	0.42	0.69	0.46	0.57
C315	1.04	1.30	1.05	1.30	1.30	PO6	PO7	PO8	1.54	1.18	PO11	0.91
C316	1.17	1.49	1.23	1.49	1.49	PO6	PO7	PO8	1.70	1.36	PO11	1.04
C319	1.00	1.07	0.43	0.65	0.87	PO6	PO7	PO8	0.45	0.80	0.43	0.75
C320	1.91	2.08	0.87	1.30	1.73	PO6	PO7	PO8	0.87	1.56	0.87	1.52
C401	1.98	1.67	1.71	1.67	0.77	PO6	PO7	PO8	1.5	1.37	0.77	PO12
C402	2.60	2.20	2.25	2.20	1.00	PO6	PO7	PO8	2.00	1.80	1.00	PO12
C414	2.27	1.70	0.84	1.67	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

PO Attainment Indirect

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Program Exit	2.77	2.55	2.58	2.43	2.40	2.67	2.60	2.69	2.70	2.71	2.67	2.60

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	1.67	1.40	1.24	1.20	1.32	2.24	1.39	1.51	1.10	1.10	0.86	1.03
InDirect Attainment	2.77	2.55	2.58	2.43	2.40	2.67	2.60	2.69	2.70	2.71	2.67	2.60
Overall Attainment	1.89	1.63	1.51	1.45	1.54	2.33	1.63	1.75	1.42	1.42	1.22	1.34

PSO Attainment

Course	PSO1	PSO2
C101	0.39	PSO2

C102	PSO1	PSO2
C104	0.49	0.49
C105	0.49	0.49
C107	0.74	0.74
C108	0.77	0.77
C109	PSO1	PSO2
C110	0.38	PSO2
C111	0.69	PSO2
C113	0.56	0.56
C114	PSO1	0.47
C115	PSO1	PSO2
C117	0.64	0.64
C118	PSO1	0.93
C119	PSO1	PSO2
C201	0.50	PSO2
C202	1.20	0.53
C203	1.88	0.83
C204	1.03	0.51
C205	1.28	0.64
C206	0.65	0.47
C207	1.04	0.83
C208	0.96	0.83
C209	1.49	1.25
C211	1.40	1.25
C212	0.42	PSO2
C213	1.33	0.51
C214	2.60	1.00
C215	1.03	0.67
C216	1.59	1.11
C218	1.75	2.40
C219	PSO1	PSO2
C220	1.17	1.04
C221	PSO1	0.33
C301	0.68	0.52
C302	1.40	1.00

C303	0.65	0.78
C304	0.87	1.04
C305	0.77	0.77
C306	1.35	1.35
C307	PSO1	PSO2
C308	0.75	0.76
C309	0.83	0.80
C310	PSO1	0.47
C311	2.33	3.00
C312	PSO1	PSO2
C313	0.71	0.53
C314	0.89	0.67
C317	0.83	0.93
C318	1.47	1.67
C319	0.80	0.75
C320	1.56	1.52
C321	1.44	1.42
C322	2.00	2.00
C323	1.75	1.67
C324	2.33	3.00
C325	0.62	1.30
C326	1.00	2.00
C401	0.75	0.75
C402	1.00	1.00
C403	0.85	1.07
C404	1.60	2.00
C405	1.09	1.22
C406	1.52	1.77
C407	1.50	1.75
C409	2.33	3.00
C410	PSO1	PSO2
C411	1.68	0.96
C412	0.52	PSO2
C413	2.63	2.57
C414	1.70	0.84

C415	2.33	2.33
C103	PSO1	PSO2
C106	PSO1	PSO2
C112	PSO1	PSO2
C116	0.74	PSO2
C120	0.33	PSO2
C210	PSO1	1.00
C217	1.04	0.57
C315	1.18	1.03
C316	1.31	1.13
C408	1.00	1.00

PSO Attainment Indirect

Survey	**PSO1**	**PSO2**
Program Exit Survey	2.57	2.63

PSO Attainment Level

Course	**PSO1**	**PSO2**
Direct Attainment	1.16	1.13
InDirect Attainment	2.57	2.63
Overall Attainment	1.44	1.43

4 STUDENTS' PERFORMANCE (120) Total Marks 90.30

:

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)	120	120	120	120	120	120	120
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	110	117	118	120	117	117	104
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	18	22	15	20	16	5
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	6	6	6	6	6	4	6

Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	116	141	146	141	143	137	115

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)	116				
2024-25 (CAYm1)	141	114			
2023-24 (CAYm2)	146	110	125		
2022-23 (CAYm3)	141	100	105	104	
2021-22 (LYG)	143	92	108	106	87
2020-21 (LYGm1)	137	119	128	97	94
2019-20 (LYGm2)	115	108	112	111	106

4.1 Enrolment Ratio (20)

Total Marks 20.00

Institute Marks : 20.00

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)	120	110	6	96.67
2024-25 (CAYm1)	120	117	6	102.50
2023-24 (CAYm2)	120	118	6	103.33

Average [(ER1 + ER2 + ER3) / 3] = 100.83 ≡ 100

Assessment : 20.00

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

Total Marks 10.71

Institute Marks : 10.71

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).	143.00	137.00	125.00
B=No. of students who graduated from the program in the stipulated course duration	87.00	94.00	106.00
Success Rate (SR)= (B/A) * 100	60.84	68.61	84.80

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 71.42

SR Points : 10.71

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 6.13

Institute Marks : 6.13

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)	7.07	7.40	6.51
Y=Total no. of successful students	114.00	110.00	100.00
Z=Total no. of students appeared in the examination	123.00	122.00	126.00
API [X*(Y/Z)]	6.55	6.67	5.17

Average API[(AP1+AP2+AP3)/3] : 6.13

Assessment = Average API : 6.13

4.4 Academic Performance of the Second Year Students of the Program (10) Total Marks 6.28

Institute Marks : 6.28

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)	7.30	6.64	6.08
Y=Total no. of successful students	125.00	105.00	108.00
Z=Total no. of students appeared in the examination	132.00	115.00	112.00
API [X * (Y/Z)]	6.91	6.06	5.86

Average API [(AP1 + AP2 + AP3)/3] : 6.28

Assessment [AverageAPI] : 6.28

4.5 Academic Performance of the Third Year Students of the Program (10) Total Marks 6.25

Institute Marks : 6.25

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)	7.00	6.63	7.00
Y=Total no. of successful students	104.00	106.00	97.00
Z=Total no. of students appeared in the examination	105.00	108.00	128.00
API [X*(Y/Z)]:	6.93	6.51	5.30

Average API [(AP1 + AP2 + AP3)/3] : 6.25

Assessment [1.5 * AverageAPI] : 6.25

4.6 Placement, Higher Studies and Entrepreneurship (30) Total Marks 15.93

Institute Marks : 15.93

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	140.00	136.00	125.00
X=No. of students placed	64.00	59.00	84.00
Y=No. of students admitted to higher studies	1.00	1.00	1.00
Z= No. of students taking up entrepreneurship	1.00	0.00	0.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	47.14	44.12	68.00

Average Placement Index = (P_1 + P_2 + P_3)/3: 53.09

Placement Index Points: 15.93

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	Indian Society for Technical Education (ISTE)
2	Institution of Electronics and Telecommunication Engineers (IETE)
3	RCPIT WINGS –Club
4	Robo TEBM Club
5	Commexus Club

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	RCPIT WINGS -Club	Technodium	National	29/03/2025
2	RCPIT WINGS -Club	Avitron 2.0	National	23/01/2025
3	Robo TEBM Club	Robotron 2.0	National	27/09/2024
4	Robo TEBM Club	Electroboat 1.0	National	06/08/2024

(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	RCPIT WINGS -Club	Aerobasics	National	28/03/2024
2	RCPIT WINGS -Club	Avitron 1.0	National	15/02/2024
3	Robo TEBM Club	Robotron 1.0	National	09/09/2023
4	Robo TEBM Club	Electroboat 1.0	National	22/08/2023

(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	RCPIT WINGS -Club	UAV Pilot Training & Visit at Bose Institute, Kolkata, West Bengal	National	21/08/2022
2	RCPIT WINGS -Club	Drone Workshop	National	08/07/2022
3	Robo TEBM Club	Startup Training & visit-Anantrao Pawar College of Engineering & Research, Pune	National	11/10/2022
4	Robo TEBM Club	World Robotics Competition	National	11/12/2022

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	Gujar Prachi Vinod	Advitiya - 24	National	29/11/2024	Participations
2	Gujar Prachi Vinod	Tech-Sanjivani2K25	National	08/02/2025	2nd position
3	Gujar Prachi Vinod	PROJIT	National	22/02/2025	1st position
4	Patil Nikhil Kishor	Techno	National	17/03/2025	Participations
5	Patil Sanika Prafulla	Tech-Sanjivani2K25	National	08/02/2025	1st position
6	Badgujar Dimpal Shivaji	Tech-Sanjivani2K25	National	08/02/2025	3rd position
7	Patil Shubham Chandrakant	Techno	National	17/03/2025	3rd position
8	Patil Shubham Chandrakant	PROJIT	National	22/02/2025	Participations
9	Girase Pramodsing Ravindrasing	Igniting Innovation	National	27/02/2025	1st position
10	Girase Pramodsing Ravindrasing	College Youth Ideathon @ IIT Delhi	National	06/02/2025	Participations
11	Sonawane Anarya Shailendra	Aviskar 2025	National	10/11/2025	2nd position
12	Sonawane Anarya Shailendra	Tech Sanj2025	National	08/11/2025	Participations
13	Sonawane Anarya Shailendra	Tech Carvaan 2025	National	27/02/2025	Participations
14	Khonde Gaurav	Mindbend 2025	National	06/04/2025	1st position
15	Chaudhari Pranita Vinod	Techfest	National	23/02/2025	Participations
16	Chavan Purva Manoj	Techfest	National	23/02/2025	Participations
17	Patil Purva Dinesh	Tech Carvaan 2025	National	24/03/2025	Participations
18	Patil Purva Dinesh	Spark2k2025	National	16/04/2025	Participations
19	Patil Hetal Chhotulal	TECHNRION2025	National	21/03/2025	Participations
20	Patil Hetal Chhotulal	Techfest	National	23/02/2025	Participations
21	Rajput Ashwini Kevalsing	IET KK WAGH EXPO 2025	National	01/03/2025	Participations
22	Mahajan Mansi Sanjay	Spark2k2025	National	16/04/2025	Participations
23	Mahajan Mansi Sanjay	Mindbend 2025	National	06/04/2025	Participations
24	Mahajan Mansi Sanjay	TECHNRION2025	National	21/03/2025	Participations
25	Mali Divya Hiralal	MINDBEND 25	National	06/04/2025	Participations

(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	Sameer Nirnjan Pawar	Shaastra X Codechef Programming Tourment	National	18/04/2024	Participations
2	Dorik Pooja Dagdu	Internship & Job Preparation	National	18/04/2024	Participations
3	Prathamesh Mali, Premkumar Patil, Harshal Mhaske, Anurag Jamadar, Tanmay Mahale, Jayesh Chaudhari	EXCALIBUR 2K24	National	18/04/2024	First Prize
4	Prathamesh Mali, Kinjal Lohar, Aditi Patil, Mandar Patil, Chaitanya Patil	EXCALIBUR 2K24	National	18/04/2024	First Prize
5	Prathamesh Mali, Kinjal Lohar, Aditi Patil, Mandar Patil, Chaitanya Patil	EXCALIBUR 2K24	National	18/04/2024	Participations
6	Prathamesh Mali (TY), Kinjal Lohar (SY), Aditi Patil (TY), Mandar Patil (FY), Chaitanya Patil (FY)	EXCALIBUR 2K24	National	18/04/2024	First Prize
7	Kinjal Lohar, Mali Prathamesh Yogesh, Ajay Patil, and Dhanashri Chaudhari	INFINITY TechFest	National	05/04/2024	First Prize

(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	Amisha Anil Shah	Girls into Tech	National	02/03/2022	Participations
2	Wagh Sneha Udesh	INNOVATE INDIA CODING	National	29/07/2022	Participations
3	Wagh Sneha Udesh	Python	International	13/06/2022	Participations
4	Wadile Jayesh Kokendra	web Development Training	National	05/05/2023	Participations
5	Mahajan Shubhangi Sukadev	Web Development and Designing Internship	National	19/05/2023	Participations
6	More Mayur Suresh	Java J2E	International	10/10/2022	Consolation
7	More Mayur Suresh	Basic Electrical Engineering	National	01/05/2023	Participations
8	More Mayur Suresh	Internship	National	04/01/2023	Participations
9	Balraj Girase	Data Analytics	National	04/01/2023	Participations
10	Yogesh Dilip Lohar	Front End Developer HTML	National	02/01/2023	Participations
11	Sanskruti Girish Bhamre	Introduction to R	National	06/01/2022	Participations
12	Dorik Pooja Dagdu	Programming with C and C++	National	15/06/2023	Participations
13	Kalyani Vilass Saner	Linux Operating System	National	15/06/2023	Participations
14	Kalyani Vilas Saner	Treasure Hunt	National	03/11/2023	Participations
15	Kalyani Vilas Saner	Software Development Challenge	National	29/07/2022	Participations
16	Kalyani Vilas Saner	Innovate India Coding Championship	National	29/07/2022	Participations
17	Kalyani Vilas Saner	C Programming Quiz	National	29/07/2022	Participations
18	Mansi Dilip Marathe	Pinnacle 2022	National	29/09/2022	Participations
19	Megha Nepalsing Pawar	NAVADHARA 2K22	State	23/09/2022	Participations
20	Megha Nepalsing Pawar	National technical Quiz	National	05/09/2022	Participations
21	Megha Nepalsing Pawar	Asian Paints The MOsaic 2023	National	24/02/2023	Participations
22	Seema Dnyaneshwar Patil	Navdhara 2K22	State	23/09/2022	Participations
23	Yash Amit Bhavsar	Computer engineering	National	29/07/2022	Participations
24	Aman Pandey	Android Devlopment	National	18/03/2023	Participations
25	Aman Pandey	NAVDHARA 2K22	State	23/09/2022	Participations
26	Patil PremKumar Waman	NAVDHARA 2K22	National	23/09/2022	Participations
27	Jayesh Namdeo Chaudhari	Sustainability Hackathon Challenge 2023	International	14/10/2022	2nd position
28	Harshal Mhaske	Innovision	State	27/03/2023	2nd position
29	Riddhi Kailas Bhavsar	Technovation Hackathon	National	04/02/2023	Participations
30	Riddhi Kailas Bhavsar	India International Science Festival – 2022	International	22/01/2023	Participations

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	News Bulletin	Prof B V Patil	Badgujar Jhanvi, Harshali Lokhande, Chaudhari Chetana	5	1	Soft Copy
2	News Bulletin	Prof B V Patil	Sonawane Chetana, Patil Chitali, Nandre Chinmay	4	1	Soft Copy
3	Technical Magazine- TechPulse-2024-25	Prof Dr V S Patil	Anurag Jamadar, Prem kumar Patil, Aditi A Patil	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	News Bulletin	Prof B V Patil	Anurag Jamadar, Prem kumar Patil, Aditi A Patil	5	1	Soft Copy
2	News Bulletin	Prof B V Patil	Badgujar Jhanvi, Harshali Lokhande, Chaudhari Chetana	4	1	Soft Copy
3	Technical Magazine- TechPulse-2023-24	Prof Dr V S Patil	Aman Pandey, Shinde Dipti, Chaudhari Neha	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	News Bulletin	Prof B V Patil	Aman Pandey, Shinde Dipti, Chaudhari Neha	5	1	Soft Copy
2	News Bulletin	Prof B V Patil	Anurag Jamadar, Prem kumar Patil, Aditi A Patil	4	1	Soft Copy
3	Technical Magazine- TechPulse-2022-23	Prof Dr V S Patil	Ashish Tawar, Mahajan Shubhangi, Yash Thakur	8	1	Soft Copy

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	Bhagwan Gajanan Ahire, Machhindra Sanjay Shimpi, Leena Chhotulal Chaudhari, Vaibhav Kashinath	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	6	-
2	Tejas Satish Patil, Janhavi Anil Mali, Gitai Girish Bhagwat, Shridhar Pandit Pawar	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	6	-
3	Piyush Suresh Patil, Harsh Bhausaheb Patil, Nikhil Rajendra Patil, Parimal Ramkrushna Salunke	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	6	-
4	Nandini Vilas Patil, Umeshwari Shriram Badgujar, Kadambari Pravin Suryawanshi, Vaishnavi Kishor Bavi	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	6	-
5	Kanhaiya R. Sonawane, Bhuvan S. Suryawanshi, Neha B. Chaudhari, Surbhi U. Marathe	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	6	-
6	Sumit S. Patil, Nandini Behare, Abhilasha Borole, Parag Patil	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	6	-
7	Om Chavan, Jayesh Badgujar, Pranjal Rajput, Sanket Sonje,	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	6	-

(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	Bhoi Nandini Machchhindra, Bhoi Gaurav Dilip, Chavan Vyankatesh Bharat, Samsher Shaila Ravindra	8	iJournals Academic Publications	iJournals: International Journal of Software & Hardware Research in Engineering	12	5	-
2	Swaraj Sudhakar Patil, Yash Vijay Vaishyawani, Umesh Suresh Mali, Lalit Chandrakant Nikam	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	5	-
3	Durgesh Jagannath Sonawane, Vaibhavi Nandkumar Patil, Mohit Shailesh Patil	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	5	-
4	Divya Patil, Rajnandini Sonawane, Komal Chavhan, Mamta Girase	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	5	-
5	Aakanksha Ravindra Sonawane, Jayesh Ravindra Sonawane, Kirti Bharat Mali, Kumud Ashok Pawar	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	5	-
6	Hitesh Vasudev Patil, Jayesh Narayan Patil, Umakant Sanjay Suryawanshi, Gaurav Uttam Bagul	8	International Confernce on Advanced Technologies and Intelligent automation	ICATIA-24	0	0	-
7	Desale Pavan D, Jadhav Nilesh S, Mali Tejal R	8	GF's Godavari College of Engineering, Jalgaon.	One day Online International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-9651	0	0	Best Paper
8	Patil Roshni, Tamaichekar Himanshu, Kashmiri Sabirhussain	8	GF's Godavari College of Engineering, Jalgaon.	One day Online International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-9651	0	0	-
9	Patil Manish R, Badgujar Bhushan A, Shinde Yashkumar R	8	GF's Godavari College of Engineering, Jalgaon.	One day Online International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-9651	0	0	-
10	Nayan Shantaram Badgujar, Ankit Prakash Desale, Balraj Arun Girase	8	GF's Godavari College of Engineering, Jalgaon	One day Online International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-9651	0	0	-
11	Patil Sunil S, Thakur Yash B, Patil Prajwal S	8	GF's Godavari College of Engineering, Jalgaon.	One day Online International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-9651	0	0	-
12	Mayur More, Priyanka Sonawane	8	GF's Godavari College of Engineering, Jalgaon	One day Online International Conference on Recent Advances in Engineering, Science and Technology-2024 (ICRAEST-2024) 15 March, 2024 ISBN: 978-81-9651	0	0	-

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	Wadile Kiran, Shirsath Vijay, Wadile Jayesh	8	GF's Godavari College of Engineering, Jalgaon.	One day Online International Conference on Recent Advances in Engineering, Science and Technology-2023 (ICRAEST-2023) 29 March,2023 ISBN: 978-81-949	0	0	Best Paper
2	Pranav Prashanth Puthuvoth, Akshay Kishor Patil,Yamini Sanjay Mene	8	GF's Godavari College of Engineering, Jalgaon	One day Online International Conference on Recent Advances in Engineering, Science and Technology-2023 (ICRAEST-2023) 29 March,2023 ISBN: 978-81-949	0	0	-
3	Samudre Kanak Anil, Patil Vijaya Sharad, Sonawane Diksha Nitin	8	GF's Godavari College of Engineering, Jalgaon	One day Online International Conference on Recent Advances in Engineering, Science and Technology-2023 (ICRAEST-2023) 29 March,2023 ISBN: 978-81-949	0	0	-
4	Jadhav Manasi S, Amrutkar Anushka P, Sonawane Sakshi A	8	GF's Godavari College of Engineering, Jalgaon	One day Online International Conference on Recent Advances in Engineering, Science and Technology-2023 (ICRAEST-2023) 29 March,2023 ISBN: 978-81-949	0	0	-
5	Tawar Aashish J, Patil Lalit B, Marathe Pawan V	8	GF's Godavari College of Engineering, Jalgaon	One day Online International Conference on Recent Advances in Engineering, Science and Technology-2023 (ICRAEST-2023) 29 March,2023 ISBN: 978-81-949	0	0	-

5 FACULTY INFORMATION (100) Total Marks 82.30

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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	Prof.Dr. Pramod Jagan Deore	AGXPD0607P	NA	Ph.D	SRTMU, Nanded	Control Systems	12/08/2002	23.5	Lecturer	Professor	01/07/2008	Regular	Yes		No
2	Prof.Dr. Vijay Shrinath Patil	AOXPP4050Q	NA	Ph.D	KBCNMU, Jalgaon	Image Processing	11/07/2005	20.6	Lecturer	Professor	01/07/2021	Regular	Yes		Yes
3	Mr.Pravin Ravindra Bhole	AJKPB8809P	NA	M.E.	KBCNMU, Jalgaon	Electronics and Telecommunication Engineering	01/07/2003	22.6	Lecturer	Assistant Professor		Regular	Yes		No
4	Prof.Dr. Jagadish Baburao Jadhav	AGDPJ4697H	NA	Ph.D	KBCNMU, Jalgaon	Microwave Antenna	16/08/2004	21.5	Lecturer	Professor	01/07/2020	Regular	Yes		No
5	Dr. Vinodkumar Ramesh Patil	AOTPP1500P	NA	Ph.D	KBCNMU, Jalgaon	Biomedical Image Processing	01/07/2005	20.6	Lecturer	Associate Professor	01/07/2025	Regular	Yes		No
6	Prof. Dr. Tushar Hrishikesh Jaware	AGZPJ7495F	NA	Ph.D	SGB Amravati University	Biomedical Image Processing	21/07/2005	20.5	Lecturer	Professor	01/06/2022	Regular	Yes		No
7	Dr. Ravindra Daga Badgujar	AKWPB6915H	NA	Ph.D	KBCNMU, Jalgaon	Biomedical Image Processing	21/07/2005	20.5	Lecturer	Associate Professor	01/06/2022	Regular	Yes		No
8	Dr. Smital Dhanraj Patil	BCHPP0512L	NA	Ph.D	KBCNMU, Jalgaon	Biomedical Image Processing	13/12/2005	20.1	Lecturer	Assistant Professor		Regular	Yes		No
9	Dr. Kiran Hilal Sonawane	BLUPS5742M	NA	Ph.D	KBCNMU, Jalgaon	Microwave Antenna	17/07/2006	19.6	Lecturer	Assistant Professor		Regular	Yes		No
10	Dr. Mahesh Bhimsham Dembrani	ALHPD7321F	NA	Ph.D	SGB Amravati University	Signal Processing	17/07/2006	19.6	Lecturer	Associate Professor	01/06/2022	Regular	Yes		No
11	Dr. Narendra Lalchand Lokhande	ACKPL2396J	NA	Ph.D	KBCNMU, Jalgaon	Biomedical Image Processing	07/08/2006	19.5	Lecturer	Assistant Professor		Regular	Yes		No
12	Dr. Jitendra Prakash Patil	ASGPP0623C	NA	Ph.D	KBCNMU, Jalgaon	Biomedical Image Processing	20/08/2007	18.4	Lecturer	Assistant Professor		Regular	Yes		No

13	Dr. Prashant Gorakh Patil	ARKPP8424E	NA	Ph.D	RTM Nagpur University	Speech Processing	25/08/2007	18.4	Lecturer	Associate Professor	01/06/2022	Regular	Yes		No
14	Dr. Bhushan Vamanrao Patil	AXOPP2508F	NA	Ph.D	KBCNMU, Jalgaon	Image Processing and IoT	02/06/2008	17.7	Lecturer	Assistant Professor		Regular	Yes		No
15	Dr. Prashant Maganlal Goad	APOPG3950N	NA	Ph.D	KBCNMU, Jalgaon	Biomedical Signal Processing	04/08/2008	17.5	Lecturer	Assistant Professor		Regular	Yes		No
16	Dr. Anupkumar Bhatulal Jayaswal	AQXPJ3481B	NA	Ph.D	KBCNMU, Jalgaon	Biomedical Image Processing	12/07/2010	15.6	Assistant Professor	Assistant Professor		Regular	Yes		No
17	Dr. Vinitkumar Vasantbhai Patel	AWSPP8923D	NA	Ph.D	Parul University Vadodara	Biomedical Image Processing	22/09/2010	15.4	Assistant Professor	Assistant Professor		Regular	Yes		No
18	Mr. Manoj Lilachand Patel	BVJPP8896G	NA	M.E.	SGB Amravati University	Digital Electronics Engineering	22/07/2011	14.5	Assistant Professor	Assistant Professor		Regular	Yes		No
19	Mrs. Kavita Sagar Patil	CEJPD2233M	NA	M.E.	KBCNMU, Jalgaon	Electronics and Telecommunication Engineering	01/12/2022	3.1	Assistant Professor	Assistant Professor		Regular	Yes		No
20	Mr. Subhash Gokul Patil	BAUPP2475F	NA	M.Tech	RGPV Bhopal	Digital Communication Engineering	01/02/2025	0.11	Assistant Professor	Assistant Professor		Regular	Yes		No
21	Mrs. Sneha Manish Gagarani	AUSPG1346B	NA	M.E.	KBCNMU, Jalgaon	Electronics and Telecommunication Engineering	07/08/2023	2.5	Assistant Professor	Assistant Professor		Regular	Yes		No
22	Mr. Vediya Sitaram Raghuvanshi	BINPR9023C	NA	M.Tech	SPPU,Pune	VLSI and Embedded Systems	25/07/2016	8.10	Assistant Professor	Assistant Professor		Regular	No	30/05/2025	No
23	Dr. Sagar Arun More	ANMPM0222B	NA	Ph.D	KBCNMU, Jalgaon	Biometric Image Processing	16/08/2004	19.9	Lecturer	Associate Professor	01/06/2022	Regular	No	31/05/2024	No
24	Mr. Kaustubh Shivaji Sagale	CSAPS5671M	NA	M.E.	RGPV Bhopal	Digital Communication	03/08/2023	1.1	Assistant Professor	Assistant Professor		Regular	No	25/09/2024	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

Electronics Telecommunication 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	120	12	120	12	120	12
3rd Year	120	12	120	12	120	12
4th Year	120	12	120	12	120	12
Sub-Total	**360**	**36**	**360**	**36**	**360**	**36**
Total	**396**		**396**		**396**	
Grand Total	396		396		396	

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

Electronics Telecommunication Engineering

Description	CAY(2025-26)	CAYm1 (2024-25)	CAYm2 (2023-24)
UG1.B	132	132	132
UG1.C	132	132	132
UG1.D	132	132	132
UG1: Electronics Telecommunication Engineering	**396**	**396**	**396**
DS=Total no. of students in all UG and PG programs in the Department	396	396	396
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=** 396	**S2=** 396	**S3=** 396
DF=Total no. of faculty members in the Department	21	21	23
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=** 21	**F2=** 21	**F3=** 23
FF=The faculty members in F who have a 100% teaching load in the first-year courses	2	3	3
Student Faculty Ratio (SFR)=S/(F-FF)	**SFR1= 20.84**	**SFR2= 22.00**	**SFR3= 19.80**
Average SFR for 3 years	**SFR= 20.88**		

Average SFR for three assessment years : 20.88

Assessment SFR : 18

5.2 Faculty Qualification (25) Total Marks 19.30

Institute Marks : 19.30

Year	X	Y	RF	FQ = 2.5 x [(10X + 4Y) / RF)]
2025-26(CAY)	15	6	19.00	22.89
2024-25(CAYm1)	7	14	19.00	16.58
2023-24(CAYm2)	8	15	19.00	18.42

Average Assessment : 19.30

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)	2.00	4.00	4.00	4.00	13.00	13.00
CAYm1(2024-25)	2.00	4.00	4.00	3.00	13.00	14.00
CAYm2(2023-24)	2.00	4.00	4.00	4.00	13.00	15.00
Average Numbers	2.00	4.00	4.00	3.67	13.00	14.00

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. Sandip Ramesh Thakre	Associate Director, UBS AG, Warsaw, Poland	UBS AG, Warsaw, Poland	Programming Languages using real time projects	60.00
2	Mr. Pramod Brijlal Patel	Computer Scientist, Edgeverve Systems Ltd. An Infosys Company, Pune	Edgeverve Systems Ltd. An Infosys Company, Pune	Data Engineering	70.00

(CAYm2) 2023-24

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Sandip Ramesh Thakre	Associate Director, UBS AG, Warsaw, Poland	UBS AG, Warsaw, Poland	Programming Languages using real time projects	60.00

(CAYm3) 2022-23

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Sandip Ramesh Thakre	Associate Director, UBS AG, Warsaw, Poland	UBS AG, Warsaw, Poland	Programming Languages using real time projects	60.00

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).	19	19	18
AF=The no. of available faculty members in the Department including allied Departments	21	23	20
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)	0	1	0
C= The no. of faculty members at the current institute with more than 2 years and less than 3 years of experience (C in AF)	1	1	0
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	0
E= The no. of faculty members at the current institute with more than 4 years of experience (E in AF)	19	20	20
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 100.00

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	Dr. Pramod Jagan Deore	All India Council for Technical Skill Development	Lifetime
2	Dr. Pramod Jagan Deore	International Association of Engineers (IAENG)	Lifetime
3	Dr. Pramod Jagan Deore	Indian Society for Technical Education	Lifetime
4	Dr Vijay Shrinath Patil	Indian Society for Technical Education (ISTE)	Lifetime
5	Dr Vijay Shrinath Patil	International Association of Engineers (IAENG)	Lifetime
6	Mr. Pravin Ravindra Bhole	International Association of Academic plus Corporate (22-23)	Annual
7	Mr. Pravin Ravindra Bhole	Institute of Research Engineers & Doctors (22-23)	Annual
8	Mr. Pravin Ravindra Bhole	International Association of Engineers	Lifetime
9	Mr. Pravin Ravindra Bhole	Indian Society For Technical Education(ISTE)	Lifetime
10	Dr. Jagadish Baburao Jadhav	International Association of Engineers	Lifetime
11	Dr. Jagadish Baburao Jadhav	The Society of Digital Information and Wireless Communications	Annual
12	Dr. Jagadish Baburao Jadhav	Indian Society For Technical Education(ISTE)	Lifetime
13	Dr.Sagar Arun More	Indian Society For Technical Education(ISTE)	Lifetime
14	Dr. Vinodkumar Ramesh Patil	IAENG Society of Artificial Intelligence(2022-23)	Annual
15	Dr. Vinodkumar Ramesh Patil	IAENG Society of Bioinformatics(2022-23)	Annual
16	Dr. Vinodkumar Ramesh Patil	IAENG Society of Computer Science(2022-23)	Annual
17	Dr. Vinodkumar Ramesh Patil	IAENG Society of Imaging Engineering(2022-23)	Annual
18	Dr. Vinodkumar Ramesh Patil	IAENG Society of Information System Engineering(2022-23)	Annual
19	Dr. Vinodkumar Ramesh Patil	International Association of Engineers	Lifetime
20	Dr. Vinodkumar Ramesh Patil	Indian Society For Technical Education(ISTE)	Lifetime
21	Dr. Tushar Hrishikesh Jaware	Institution of Engineers India	Lifetime
22	Dr. Tushar Hrishikesh Jaware	Institute for Engg Research and Publication (2022-23)	Annual
23	Dr. Tushar Hrishikesh Jaware	The Society of Digital Information and Wireless Communications SDIWC (2022-23)	Annual
24	Dr. Tushar Hrishikesh Jaware	Education Research and Development Association	Lifetime
25	Dr. Tushar Hrishikesh Jaware	International Society of Fuzzy Sets Extensions and Applications	Lifetime
26	Dr. Tushar Hrishikesh Jaware	Indian Society For Technical Education(ISTE)	Lifetime
27	Dr. Ravindra Daga Badgujar	Progress in Medical Devices(2023- 24)	Annual
28	Dr. Ravindra Daga Badgujar	Education Research and Development Association	Lifetime
29	Dr. Ravindra Daga Badgujar	Indian Society For Technical Education(ISTE)	Lifetime
30	Dr. Smital Dhanraj Patil	International Association of Engineers	Lifetime
31	Dr. Smital Dhanraj Patil	Institute For Educational Research and Publication (2024-25)	Annual
32	Dr. Smital Dhanraj Patil	Indian Society For Technical Education(ISTE)	Lifetime
33	Dr. Mahesh Bhimsham Dembrani	The Society of Digital Information and Wireless Communications (2022-23)	Annual
34	Dr. Mahesh Bhimsham Dembrani	International Association of Engineers (2022-23)	Annual

35	Dr. Mahesh Bhimsham Dembrani	Education Research and Development Association	Life time
36	Dr. Mahesh Bhimsham Dembrani	Indian Society For Technical Education(ISTE)	Life time
37	Dr. Kiran Hilal Sonawane	Indian Society For Technical Education(ISTE)	Life time
38	Dr. Narendra Lalchand Lokhande	International Association of Academic plus corporate(2022-23)	Annual
39	Dr. Narendra Lalchand Lokhande	International Association of Academic plus corporate(2022-23)	Annual
40	Dr. Narendra Lalchand Lokhande	International Association of Engineers	Lifetime
41	Dr. Narendra Lalchand Lokhande	Indian Society For Technical Education (ISTE)	Lifetime
42	Dr. Jitendra Prakash Patil	The Society of Digital Information and Wireless Communications (SDIWC)	Annual
43	Dr. Jitendra Prakash Patil	International Society for Research and Development (ISRD)	Lifetime
44	Dr. Jitendra Prakash Patil	International Association of Engineers	Lifetime
45	Dr. Jitendra Prakash Patil	International Association of Engineers	Lifetime
46	Dr. Jitendra Prakash Patil	International Journal of Creative Research Thoughts	Lifetime
47	Dr. Prashant Gorakh Patil	All India Council For Technical Skill Development	Lifetime
48	Dr. Prashant Gorakh Patil	International Association of Engineers	Lifetime
49	Dr. Prashant Gorakh Patil	Indian Society For Technical Education(ISTE)	Lifetime
50	Dr. Bhushan Vamanrao Patil	International Association of Engineers	Lifetime
51	Dr. Prashant Maganlal Goad	International Association of Engineers	Lifetime
52	Dr. Prashant Maganlal Goad	Indian Society For Technical Education(ISTE)	Lifetime
53	Dr. Anupkumar Bhatulal Jayaswal	Indian Society For Technical Education(ISTE)	Lifetime
54	Dr. Vinitkumar Vasantbhai Patel	Indian Society For Technical Education(ISTE)	Life time
55	Dr. Vinitkumar Vasantbhai Patel	International Association of Engineers (IAENG)	Life time
56	Dr. Vinitkumar Vasantbhai Patel	Soft Computing Research Society(2024-25)	Annual
57	Mr. Manoj Lilachand Patel	International Association of Academic plus corporate (2022- 23)	Annual
58	Ms. Kavita Sagar Patil	Institute For Educational Research and Publication	Lifetime
59	Mr. Kaustubh Shivaji Sagale	International Association of Engineers	Lifetime
60	Mr. Kaustubh Shivaji Sagale	The Society of Digital Information and Wireless Communications (SDIWC) (2022-23)	Annual
61	Mr. Subhash Gokul Patil	Indian Society For Technical Education(ISTE)	Life time

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	Dr. Vijay Shrinath Patil	5G Technology and its impact on computing	7Nov-12Nov 2024	Indore	Oriental University , Indore
2	Dr. Mahesh Bhimsham Dembrani	5G Technology and its impact on computing	7Nov-12Nov 2024	Indore	Oriental University , Indore
3	Mr. Vinit Vasantbhai Patel	FDP on Emerging IOT simulation platform and Smart System Advancement for Electronics	12-17 Aug 2024	Nagpur	Suryodaya College of Engineering, Nagpur
4	Dr. Ravindra Daga badgujar	FDP on Emerging IOT simulation platform and Smart System Advancement for Electronics	12-17 Aug 2024	Nagpur	Suryodaya 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	Dr. Tushar Hrishikesh Jaware	Sustainable Multidisciplinary Advances in Research and Technology (SMART - 2023)	28 Nov 2023	Mauli Group of Institution' s, College of Engg & Technology , Shegaon	Mauli Group of Institution's, College of Engg and Technology, Shegaon
2	Dr. Sagar Arun More	Image and Video Processing using AIML	29Jan-3Feb 2024	Nagpur	Suryodaya College of Engineering, Nagpur
3	Mr. Narendra Lalchand Lokhande	Image and Video Processing using AIML	29Jan-3Feb 2024	Nagpur	Suryodaya College of Engineering, Nagpur
4	Dr. Tushar Hrishikesh Jaware	Short Term online FDP on Professional Development of Teachers for NEP and Career Opportunities in Ed	4-14 Dec 2023	Bareilly (U.P.)	Bareilly International University
5	Dr. Prashant Gorakh Patil	Short Term online FDP on Professional Development of Teachers for NEP and Career Opportunities in Ed	4-14 Dec 2023	Bareilly (U.P.)	Bareilly International University

(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	Dr. Tushar Hrishikesh Jaware	Three Days Faculty Development Program on "Machine Learning"	23 Feb 2023	Indira College Malegaon	Indira College Malegaon
2	Dr. Mahesh Bhimsham Dembrani	Three Days Faculty Development Program on "Machine Learning"	23 Feb 2023	Indira College Malegaon	Indira College Malegaon
3	Dr. Ravindra Daga Badgujar	Three Days Faculty Development Program on "Machine Learning"	23 Feb 2023	Indira College Malegaon	Indira College Malegaon
4	Dr. Pramod Jagan Deore	FDP on Intellectual Property Rights	13-20April 2023	Raipur	MATS University
5	Dr.Jagadish Baburao Jadhav	FDP on Intellectual Property Rights	13-20April 2023	Raipur	MATS University
6	Mr. Manoj Lilachand Patel	Inculcating Universal Human Values in Technical Education	5-10 Sep 2022	Dehradun	JB Institute of Technology (JBIT)
7	Mr. Jitendra Prakash Patil	Inculcating Universal Human Values in Technical Education	5-10 Sep 2022	Dehradun	JB Institute of Technology (JBIT)

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)
Prof Dr. Deore Pramod Jagan	5.00	5.00	5.00
Dr. Vijay Shrinath Patil	5.00	5.00	5.00
Mr. Bhole Pravin Ravindra	5.00	5.00	5.00
Prof Dr. Jadhav Jagadish Baburao	0.00	5.00	5.00
Dr. More Sagar Arun	0.00	5.00	5.00
Dr. Patil Vinodkumar Ramesh	0.00	5.00	5.00
Prof Dr. Jaware Tushar Hrishikesh	5.00	5.00	5.00
Dr. Badgujar Ravindra Daga	5.00	5.00	5.00
Dr. Patil Smital Dhanraj	5.00	5.00	5.00
Dr. Dembrani Mahesh Bhimsham	5.00	5.00	5.00
Dr. Sonawane Kiran Hilal	0.00	5.00	5.00
Dr. Lokhande Narendra Lalchand	5.00	5.00	5.00
Dr. Patil Jitendra Prakash	5.00	5.00	5.00
Dr. Patil Prashant Gorakh	5.00	5.00	5.00
Dr. Patil Bhushan Vamanrao	5.00	5.00	5.00
Dr. Goad Prashant Maganlal	5.00	5.00	5.00
Dr. Jayaswal Anupkumar Bhatulal	5.00	5.00	5.00
Dr. Patel Vinitkumar Vasantbhai	5.00	5.00	0.00
Mr. Patel Manoj Lilachand	0.00	5.00	5.00
Mr. Kaustubh Shivaji Sagale	0.00	5.00	0.00
Sum	70.00	100.00	90.00
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).	19.80	19.80	19.80

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	Prof. Dr. Pramod Jagan Deore	https://www.youtube.com/@etcdepartment
2	Dr. Vijay Shrinath Patil	https://www.youtube.com/@etcdepartment
3	Mr. Pravin Ravindra Bhole	https://www.youtube.com/@etcdepartment
4	Dr. Jagadish Baburao Jadhav	https://www.youtube.com/@etcdepartment
5	Dr. Vinodkumar Ramesh Patil	https://www.youtube.com/@etcdepartment
6	Prof. Dr. Tushar Hrishikesh Jaware	https://youtu.be/WJQrTLqz-oM?si=dEQwt-ZMMMzLtS-o https://www.youtube.com/@etcdepartment
7	Dr. Ravindra Daga Badgujar	https://www.youtube.com/@etcdepartment
8	Dr. Smital Dhanraj Patil	https://www.youtube.com/@etcdepartment
9	Dr. Mahesh Bhimsham Dembrani	https://www.youtube.com/@etcdepartment
10	Dr. Kiran Hilal Sonawane	https://www.youtube.com/@etcdepartment
11	Dr. Narendra Lalchand Lokhande	https://www.youtube.com/@etcdepartment
12	Dr. Jitendra Prakash Patil	https://www.youtube.com/@etcdepartment
13	Dr. Prashant Gorakh Patil	https://www.youtube.com/@etcdepartment
14	Dr. Bhushan Vamanrao Patil	https://www.youtube.com/@etcdepartment
15	Dr. Prashant Mangalal Goad	https://www.youtube.com/@etcdepartment
16	Dr. Anupkumar Bhatulal Jaiswal	https://www.youtube.com/@etcdepartment
17	Dr. Vinitkumar Vasantbhai Patel	https://www.youtube.com/@etcdepartment
18	Mr. Manoj Lilachand Patel	https://www.youtube.com/@etcdepartment
19	Mr. Vediya Sitaram Raghuvanshi	https://www.youtube.com/@etcdepartment
20	Mrs. Kavita Sagar Patil	https://www.youtube.com/@etcdepartment
21	Ms. Sneha Manish Gagrani	https://www.youtube.com/@etcdepartment
22	Mr. Subhash Gokul Patil	https://www.youtube.com/@etcdepartment

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	Prof. Dr. Vijay Shrinath Patil	Smart Device & Mobile Emerging Technologies (2022-23)	Coursera	---
2	Prof. Dr. Vijay Shrinath Patil	Internet of Things: How did we get here?(2022-23)	Coursera	---
3	Prof. Dr. Vijay Shrinath Patil	Python Programming Essentials (2022-23)	Coursera	---
4	Prof. Dr. Vijay Shrinath Patil	Interactivity with JavaScript(2022-23)	Coursera	---
5	Prof. Dr. Vijay Shrinath Patil	Motors and Motor Control Circuits(2022-23)	Coursera	---
6	Prof. Dr. Vijay Shrinath Patil	Embedded Hardware and Operating Systems (2022-23)	Coursera	---
7	Prof. Dr. Vijay Shrinath Patil	Data Collection and Processing with Python (2022-23)	Coursera	---
8	Mr. Pravin Ravindra Bhole	Overview of Data Visualization (2022-23)	Coursera	---
9	Dr. Vinodkumar Ramesh Patil	Nearest Neighbor Collaborative Filtering (2022-23)	Coursera	---
10	Dr. Vinodkumar Ramesh Patil	Machine Learning With Big Data(2022-23)	Coursera	---
11	Dr. Smital Dhanraj Patil	Unsupervised Machine Learning (2022-23)	Coursera	---
12	Dr. Smital Dhanraj Patil	Developing AI Applications on Azure (2022-23)	Coursera	---
13	Dr. Mahesh Bhimsham Dembrani	Foundations: Data, Data, Everywhere(2022-23)	Coursera	---
14	Dr. Mahesh Bhimsham Dembrani	Ask Questions to Make Data-Driven Decisions (2022-23)	Coursera	---
15	Dr. Mahesh Bhimsham Dembrani	Prepare Data for Exploration (2022-23)	Coursera	---
16	Dr. Mahesh Bhimsham Dembrani	Process Data from Dirty to Clean (2022-23)	Coursera	---
17	Dr. Mahesh Bhimsham Dembrani	Analyze Data to Answer Questions	Coursera	---
18	Dr. Mahesh Bhimsham Dembrani	Share Data Through the Art of Visualization(2022-23)	Coursera	---
19	Dr. Mahesh Bhimsham Dembrani	Data Analysis with R Programming(2022-23)	Coursera	---
20	Dr. Mahesh Bhimsham Dembrani	Google Data Analytics Capstone: Complete a Case Study(2022-23)	Coursera	---
21	Dr. Mahesh Bhimsham Dembrani	Machine Learning Projects for Healthcare (2022-23)	Udemy	---
22	Dr. Mahesh Bhimsham Dembrani	Machine Learning Project Heart Attack Prediction Analysis(2022-23)	Udemy	---
23	Dr. Mahesh Bhimsham Dembrani	The Complete Health Care Artificial Intelligence Course(2022-23)	Udemy	---
24	Dr. Mahesh Bhimsham Dembrani	Deep Learning with PyTorch for Medical Image Analysis (2022-23)	Udemy	---
25	Dr. Kiran Hilal Sonawane	Data Analytics with R programming (2022-23)	Coursera	---
26	Dr. Kiran Hilal Sonawane	Foundation, Data Data Everywhere(2022-23)	Coursera	---
27	Dr. Kiran Hilal Sonawane	Life Health and Radiation (2022-23)	Coursera	---
28	Dr. Narendra Lalchand Lokhande	Azure: Create a virtual Machine and deploy a web server(2022-23)	Coursera	---
29	Dr. Narendra Lalchand Lokhande	AI for Medical Diagnosis (2022-23)	Coursera	---
30	Dr. Prashant Maganlal Goad	What is Data Science? (2022-23)	Coursera	---
31	Dr. Prashant Maganlal Goad	Simple Linear Regression for the Absolute Beginner (2022-23)	Coursera	---
32	Dr. Vinodkumar Ramesh Patil	Azure Data Factory for Data Engineers – Project on Covid 19(2023-24)	Udemy	---
33	Dr. Vinodkumar Ramesh Patil	Data Engineering on Microsoft Azure 2023 (2023-24)	Udemy	---
34	Mr. Kaustubh Sagale	Python for Data Science(2023-24)	NPTEL	---

35	Mr. Pravin Ravindra Bhole	RF and Microwave Engineering(2024-25)	iemlearning	---
36	Dr. Tushar Hrishikesh Jaware	Artificial Intiligence(2024-25)	AICTE, QIP Online Programme	9.44 (CGPA
37	Dr. Tushar Hrishikesh Jaware	Fundamentals of Deep Learning (2024-25)	NVIDIA	---
38	Dr. Ravindra Daga Badgujar	Fundamentals of Deep Learning(2024-25)	NVIDIA	---
39	Dr. Ravindra Daga Badgujar	Artificial Intiligence(2024-25)	AICTE, QIP Online Programme	9.06(CGPA)
40	Dr. Smital Dhanraj Patil	Supervised Machine learning with Tree based model (2024-25)	Great Learning	---
41	Dr. Mahesh Bhimsham Dembrani	Artificial Intiligence(2024-25)	AICTE, QIP Online Programme	9.44(CGPA)
42	Dr. Mahesh Bhimsham Dembrani	Fundamentals of Deep Learning (2024-25)	NVIDIA	---
43	Dr. Narendra Lalchand Lokhande	Data Structures BSH (2024-25)	IEM	---
44	Dr. Narendra Lalchand Lokhande	Learn Python Programming(2024-25)	Codechef	---
45	Dr. Jitendra Prakash Patil	Artificial Intiligence(2024-25)	AICTE, QIP Online Programme	---
46	Dr. Jitendra Prakash Patil	Fundamentals of Deep Learning (2024-25)	NVIDIA	---
47	Dr. Prashant Gorakh Patil	Machine Learning(2024-25)	AICTE, QIP Online Programme	8.17(CGPA)
48	Mr. Bhushan Vamanrao Patil	Machine Learning (2024-25)	AICTE, QIP Online Programme	9.17(CGPA)
49	Dr. Prashant Mangalal Goad	Machine Learning(2024-25)	AICTE, QIP Online Programme	9.17(CGPA)
50	Dr. Anupkumar Bhatulal Jayaswal	Artificial Intelligence(2024-25)	AICTE, QIP Online Programme	9.22(CGPA)
51	Dr. Anupkumar Bhatulal Jayaswal	Fundamentals of Deep Learning (2024-25)	NVIDIA	---
52	Dr.Vinitkumar Vasantbhai Patel	Learn SQL (2024-25)	Codechef	---
53	Dr.Vinitkumar Vasantbhai Patel	Artificial Intiligence(2024-25)	AICTE, QIP Online Programme	9.06(CGPA)
54	Dr.Vinitkumar Vasantbhai Patel	Fundamentals of Deep Learning (2024-25)	NVIDIA	---

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	Hands-on FDP on Semiconductor Device Analysis and Signal Measurement Using Moku:Go Platform	19-23 May 2025	1 week	Dr. Tushar Hrishikesh Jaware Dr.Vinodkumar Ramesh Patil Dr. Smital Dhanraj Dr. K.H.Sonawane	20

(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	FDP on Emerging Trends in Semiconductor Measurement and Characterization Using Moku:Go	26-30 Dec 2023	1 week	Dr. Tushar Hrishikesh Jaware Dr.Vinodkumar Ramesh Patil Dr. Smital Dhanraj Patil	24
2	Computational Intelligence for Next Generation Healthcare	27-31 May 2024	1 Week	Dr.Anilkumar Dulichand Vishwakarma, Dr.Ishwar Shenfadu Jadhav, Dr. Rasika Chafle	25

(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	Emerging Technologies in Wireless Communication and IoT	22-27 Aug 2022	1 Week	Dr.P.R.Wankhede Dr. Deepak P. Patil Dr. R.K.Yadav Dr. K.B. Khanchandani	22
2	Antenna Design for Modern Wireless Applications	16-21 Jan 2023	1 Week	Dr.Jyoti Nitin Borole, Dr.Hemant Tukaram Ingale, Dr. Rasika Chafle	24

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	Prof. Dr. Deore Pramod Jagan Dr. Vijay Shrinath Patil	MindBend 2K25, SVNIT Surat	08 April 2025	SVNIT,Surat	--
2	Dr. Jadhav Jagadish Baburao	AVISHKAR Tech Fest (Open-Themed Hardware Hackathon)	22 Feb 2025	Government College of Engineering, Karad, Satara	--
3	Dr Tushar Hrishikesh Jaware Dr. Ravindra Daga Badgujar	Technovation Hackathon: 6	21-26 Jan 2025	Sharda University , Greater Noida	https://shardaevents.com/events/6th-technovation-hackathon?id=1241

(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	Prof. Dr. Vijay Shrinath Patil	Fluxus	20 April 2024	IIT Indore	---
2	Prof. Dr Tushar Hrishikesh Jaware	IEEE YESIST 2024	5 April 2024	BBIT Kolkata	https://edu.ieee.org/ug-kyu/blog/2024/02/25/ieee-yesist12-2024-competitons/
3	Dr. Ravindra Daga Badgujar	DIPEX-2024	7-10March 2024	Terna COE, Navi Mumbai	---
4	Prof. Dr Tushar Hrishikesh Jaware	IEEE YESISTI2 2024 (Team Multimaniacs)	5 April 2024	West Bengal, Budge Budge Institute of Technology	https://edu.ieee.org/ug-kyu/blog/2024/02/25/ieee-yesist12-2024-competitons/
5	Dr.Smital Dhanraj Patil Dr. Vinodkumar Ramesh Patil	EXCALIBUR 2K24 STEMSAGE	18 April 2024	Amrutvahini College of Engineering,Sangamner	---
6	Dr.Vinitkumar Vasantbhai Patel Dr. Mahesh Bhimsham Dembrani	INFINITY TechFest Project Competition	5 April 2024	K K Wagh Institute of Engineering Education and Research, Nashik	---
7	Dr. Jagadish Baburao Jadhav	DBATU Avishkar	26 Nov. 2023	Sant Gadge Baba COE, Bhusawal	---

(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	Prof. Dr Tushar Hrishikesh Jaware	India International science festival (Team Spark)	21-24 Jan, 2023	Maulana Azad National Institute of Technology (MANIT), Bhopal	---
2	Mr. Pravin Ravindra Bhole Dr. Narendra Lalchand Lokhande	Navdhara 2K22 (Digital Attendance System)	23 Sep. 2022	Pimpri Chinchwad College of Engineering and Research, Ravet, Pune	https://pccoer.com/NAAC/CR-7/7.2/Best%20Practice%202/4_Navdhara%20Report%20.pdf
3	Mr. Manoj Lilichand Patel Dr. Anupkumar Bhatulal Jaiswal	Technocave 2022	4 June 2022	Shri Vile Prale Kelwani Mandal's Institute of Technology, Dhule	---

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	Mr Pravin Ravindra Bhole Mr. Kiran Hilal Sonawane Dr.Smital Dhanraj Patil	PLC training	Scientech Technologies Pvt. Ltd	22 Sept 24	Practicals conduction
2	Dr. Vinodkumar Ramesh Patil Dr. Prashant Gorakh Patil Dr. Vinitkumar Vasantbhai Patel	IOT Training	Dolphin Labs, Pune	22-24May25	Conducted workshop on IOT of TY students
3	Dr. Smital Dhanraj Patil Dr. Tushar Hrishikesh Jaware Dr. Mahesh Bhimsham Dembra	Arduino Programming	Dolphin Labs, Pune	22-24May25	Conducted workshop on IOT of SY students
4	Dr. Vinodkumar Ramesh Patil Dr. Prashant Gorakh Patil Mr. Vinitkumar Vasantbhai Patel	Industrial Approach in Electronics	B. M. Electronics , Nashik	27–30Dec23	Conducted workshop of SY and TY students
5	Dr. Kiran Hilal Sonawane Ms.Smital Dhanraj Patil Mr. Pravin Ravindra Bhole Mr. Bhushan Vamanrao Pati	Training on Electrical and Electronics Engineering Applications in Industry	Matoshree Electrical & Engineering Works , Chittod Road Dhule	2-6Jan24	Conducted seminar for FY students
6	Dr.Tushar Hrishikesh Jaware	Silicon Test Engineer, Train the trainers program	Silicon Test Engineer, Train the trainers program Tessolve Semiconductors , Bangalore	24-29Apr23	Recognized as a mentor for Project Based Learning
7	Dr. Vinodkumar Ramesh Patil	Silicon Test Engineer, Train the trainers program	Tessolve Semiconductors , Bangalore	24-29Apr23	Recognized as a mentor for Project Based Learning
8	Dr. Kiran Hilal Sonawane Ms.Smital Dhanraj Patil Mr. Pravin Ravindra Bhole Mr. Bhushan Vamanrao Pati	Industrial Approach in Electronics	B. M. Electronics , Nashik	25-30Jul22	workshop of SY and TY students
9	Mr. Pravin Ravindra Bhole	High Performance Computing(2024-25)	CDAC Centre, Pune	Jul-Dec 24	Conducted workshop on high-performance computing
10	Dr. Jagadish Baburao Jadhav	High Performance Computing(2024-25)	CDAC Centre, Pune	Jul-Dec 24	Conducted workshop on high-performance computing
11	Dr. Narendra Lalchand Lokhande	High Performance Computing(2024-25)	CDAC Centre, Pune	Jul-Dec 24	Conducted workshop on high-performance computing
12	Dr. Kiran Hilal Sonawane	High Performance Computing(2024-25)	CDAC Centre, Pune	Jul-Dec 24	Conducted workshop on high-performance computing
13	Mr. Manoj Lilachand Patel	High Performance Computing(2024-25)	CDAC Centre, Pune	Jul-Dec 24	Conducted workshop on high-performance computing

6.2 Research and Development Activities (60) Total Marks 40.00

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	13	7	5
2	No. of peer reviewed conference papers published	6	23	5
3	No. of books/book chapters published	6	2	5

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	6
2	No. of Ph.D. students graduated in the Department	5	0	0

6.2.3 Development Activities (10)

Institute Marks : 10.00

Table No. 6.2.3.1: patents granted/published

S N	Name of Faculty	Title	Application	Published/ Granted
CAY-m1 (2024-25)				
1	Dr. Bhushan Vamanrao Patil	METAHEURISTIC ASSISTED HYBRID DEEP LEARNING MODEL FOR COTTON DISEASE PREDICTION AN INTERNET OF THINGS BASED APPLICATION	202421001729 A	Published
2	Mr Pravin Ravindra Bhole	High Frequency Signal Enhancement Antenna with Low SNR Device	6406094	Granted
3	Mr Pravin Ravindra Bhole	WIRELESS HOME AUTOMATION DEVICE	430665-001	Granted
4	Dr.Tushar Hrishikesh Jaware	REAL-TIME HEALTH MONITORING STRETCHER	426384-001	Granted
5	Dr.Tushar Hrishikesh Jaware	SOIL NUTRIENT ANALYSIS AND CROP RECOMMENDATION DEVICE	445177-001	Granted
CAY m2 (2023-24)				
6	Dr.Vijay Shrinath Patil	TRANSFORMER THEFT DETECTION SYSTEM	375642-001	Granted
7	Dr. Kiran Hilal Sonawane	Slot Antenna for Wireless Applications	376627-001	Granted
CAY m3 (2022-23)				
8	Dr.Vijay Shrinath Patil	WIND VIBRATING GENERATOR	374610- 001	Granted
9	Dr. Anupkumar Bhatulal Jaiswal	FATIGUE TESTING MACHINE	368173-001	Granted
10	Dr. Bhushan Vamanrao Patil	Ultrasound Machine	380968-001	Granted

S.N.	Name of the Working Prototype/Model	Name of faculty/Students	Domain
CAY m1 (2024-25)			
1	ADAPTIVE VEGETABLE DRYING SYSTEM USING MOSFET PHASE CONTROL	Dr. Prashant Gorakh Patil	Power Electronics

CAY m1 (2023-24)			
2	Smart Home Automation System using Mobile Application	Dr. Prashant Maganlal Goad	Embedded Systems and IOT
3	Visitor Counter(Garden)	Dr. Vinodkumar Ramesh Patil	Embedded Systems and IOT
CAY m1 (2022-23)			
4	Intelligent waste management system	Dr Prashant Maganlal Goad	Artificial Intelligence & Data Analytics

6.2.4 Sponsored Research Project (15)

Institute Marks : 9.00

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
Dr. Prashant Gorakh Patil	--	Department of E&TC Engineering	Design and Development of a Humanoid Robot for Human-Like Interaction and Task Assistance (Humanoid Robot)	Atal Tinkering Lab,SES Main Building	1 Year	2.48
Dr. Bhushan Vamanrao Patil	--	Department of E&TC Engineering	Implementation of an Autonomous Line Follower Robot (Line Follower Robot)	Lotus Industries, Morbi (Gujrat)	1 Year	0.48
Dr. Mahesh Bhimsham Dembrani	--	Department of E&TC Engineering	IoT-Based Medical Emergency Response and Patient Monitoring System (Medical Emergency Response System)	Siddhivinayak hospital, Shirpur	1 Year	0.47
Dr. Narendra Lalchand Lokhande	--	Department of E&TC Engineering	Digital Pass Key Security System for Access Control (Pass Key)	Pariter M&E Commerce Solutions, Pvt Ltd	1 Year	0.38
Prof. Dr. Tushar Hrishikesh Jaware	--	Department of E&TC Engineering	Enviro-Watch – Smart IoT Based Environmental Monitoring System (Enviro Watch)	MPKV Nandurbar	1 Year	0.28
						Amount received (Rs.):4.09

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
Dr. Ravindra Daga Badgujar	--	Department of E&TC Engineering	IoT-Based Smart Irrigation and Soil Monitoring System (Krishi-Dhara)	Sonawane Nursery, Shirpur	1 Year	0.49
Dr. Kiran Hilal Sonawane	--	Department of E&TC Engineering	Real-Time Birth Counting and Display System Using Embedded Technology (Birth Counter)	Shakuntala Hospital, Shirpur	1 Year	0.33
Dr. Sagar Arun More	Mr.Om Patil	Department of E&TC Engineering	Autonomous Drone for Precision Applications (Armed UAV)	OIC Innovation Cell	1 Year	4.75
						Amount received (Rs.):5.57

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
Prof.Dr. Jagadish Baburao Jadhav	--	Department of E&TC Engineering	Sensor-Based Digital Follower Counter for Public Spaces (Follower counter)	Pariter M&E Commerce Solutions, Pvt Ltd	1 Year	0.39
Dr. Vinodkumar Ramesh Patil	--	Department of E&TC Engineering	Bidirectional Visitor Counter for Entrance Management Systems (Visitor Counter)	Shirpur Municipal Garden	1 Year	0.19
Prof.Dr. Vijay Shrinath Patil	Mr. Prathamesh Mali	Department of E&TC Engineering	Autonomous Mars Rover for Planetary Exploration and Terrain Analysis (Mars Rover)	Institute Funding for ISRO Competition	2 Year	2.19
						Amount received (Rs.):2.77

Total Amount (Lacs) Received for the Past 3 Years: 12.43

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
Prof.Dr. Vijay Shrinath Patil	--	Department of E&TC Engineering	Centralized Admission Process (CET-CELL, Maharashtra)	CET, CELL, Maharashtra	3 Months	0.39
						Amount received (Rs.):0.39

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
Prof.Dr. Vijay Shrinath Patil	--	Department of E&TC Engineering	Centralized Admission Process (CET-CELL, Maharashtra)	CET, CELL, Maharashtra	3 Months	0.59
						Amount received (Rs.):0.59

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
Prof.Dr. Vijay Shrinath Patil	--	Department of E&TC Engineering	Centralized Admission Process (CET-CELL, Maharashtra)	CET, CELL, Maharashtra	3 Months	0.46
						Amount received (Rs.):0.46

Total amount (Lacs) received for the past 3 years: 1.44

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)

6.2.6 A Amount received (3) Institute Marks : 3.00

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
Mr. Prashant Maganlal Goad	An Intelligent Computer Aided System for Prediction of Cardiovascular Disease	1 Year	0.48	0.42	Publications/ Copyrights/Patents Obtained
Mr. Anupkumar Bhatulal Jayaswal	An Automated Method for Segmentation and Detection of Cancer Cell in Kidney	1 Year	0.48	0.43	Publications/ Copyrights/Patents Obtained
Mr. Pravin Ravindra Bhole	A Compact Micro strip Patch Antenna with Enhanced Bandwidth and harmonic Suppression	1 Year	0.66	0.58	Publications/ Copyrights/Patents Obtained
Mr. Narendra Lalchand Lokhande	Computer Aided System for Detection and Diagnosis of Lung Cancer	1 Year	0.48	0.42	Publications/ Copyrights/Patents Obtained
Mr. Vinitkumar Vasanbhai Patel	All in one STEM Box	1 Year	0.07	0.06	Publications/ Copyrights/Patents Obtained
Dr. Smital Dhanraj Patil	Smart Fire Detection and Alert System	1 Year	0.19	0.17	Publications/ Copyrights/Patents Obtained
			Amount received (Rs.): 2.36		

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
Ms. Smital Dhanraj Patil	An Intelligent Computer Aided System for Detection and Characterization of Ovarian Masses	1 Year	0.48	0.39	Publications/ Copyrights/Patents Obtained
Mr. Vinodkumar Ramesh Patil	Computer Assisted Diagnosis and Neuroimaging of Baby Infants	1 Year	0.48	0.41	Publications/ Copyrights/Patents Obtained
Mr. Jitendra Prakash Patil	Computer Aided Diagnoses of Histopathological Images for Colorectal Cancer classification	1 Year	0.48	0.43	Publications/ Copyrights/Patents Obtained
Mr. Prashant Maganlal Goad	An Intelligent Computer Aided System for Prediction of Cardiovascular Disease (CVD)	1 Year	0.48	0.38	Publications/ Copyrights/Patents Obtained
Mr. Anupkumar Bhatulal Jayaswal	An Automated Method for Segmentation and Detection of Cancer Cell in Kidney	1 Year	0.48	0.36	Publications/ Copyrights/Patents Obtained
Mr. Pravin Ravindra Bhole	A Compact Micro strip Patch Antenna with Enhanced Bandwidth and harmonic Suppression	1 Year	0.66	0.58	Publications/ Copyrights/Patents Obtained
Mr. Narendra Lalchand Lokhande	Computer Aided System for Detection and Diagnosis of Lung Cancer	1 Year	0.48	0.42	Publications/ Copyrights/Patents Obtained
Dr. Ravindra Daga Badgujar	Smart Waste monitoring System	1 Year	0.15	0.10	Publications/ Copyrights/Patents Obtained
Dr Mahesh Bhimsham Dembrani	Water Quality index Measurement	1 Year	0.16	0.11	Publications/ Copyrights/Patents Obtained
			Amount received (Rs.): 3.85		

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
Ms. Smital Dhanraj Patil	An Intelligent Computer Aided System for Detection and Characterization of Ovarian Masses	1 Year	0.48	0.36	Publications/ Copyrights/Patents Obtained
Mr. Vinodkumar Ramesh Patil	Computer Assisted Diagnosis and Neuroimaging of Baby Infants	1 Year	0.48	0.23	Publications/ Copyrights/Patents Obtained
Mr. Jitendra Prakash Patil	Computer Aided Diagnoses of Histopathological Images for Colorectal Cancer classification	1 Year	0.48	0.25	Publications/ Copyrights/Patents Obtained
Mr. Prashant Maganlal Goad	An Intelligent Computer Aided System for Prediction of Cardiovascular Disease (CVD)	1 Year	0.48	0.29	Publications/ Copyrights/Patents Obtained
Mr. Anupkumar Bhatulal Jayaswal	An Automated Method for Segmentation and Detection of Cancer Cell in Kidney	1 Year	0.48	0.32	Publications/ Copyrights/Patents Obtained
Mr. Pravin Ravindra Bhole	A Compact Micro strip Patch Antenna with Enhanced Bandwidth and harmonic Suppression	1 Year	0.66	0.53	Publications/ Copyrights/Patents Obtained
Mr. Narendra Lalchand Lokhande	Computer Aided System for Detection and Diagnosis of Lung Cancer	1 Year	0.48	0.38	Publications/ Copyrights/Patents Obtained
Dr. Prashant Gorakh Patil	Wireless Floor cleaner Robot	1 Year	0.23	0.19	Publications/ Copyrights/Patents Obtained
			Amount received (Rs.): 3.77		

Total amount (Lacs) received for the past 3 years : 9.98

6.2.6 B Amount utilized (2) Institute Marks : 2.00

The department has received ₹9.9715 Lakhs of internal research funding during the last three academic years to support faculty research and innovation activities in emerging and interdisciplinary technological domains.

The sanctioned funds were utilized effectively to strengthen the department's research ecosystem and to facilitate the successful execution of faculty research projects. The utilization primarily supported various academic and research-related activities such as procurement of essential resources required for research work, development and testing of experimental setups and prototypes, and acquisition of components, tools, and materials necessary for project implementation.

The funding also supported activities related to experimental studies, simulation, design validation, and performance evaluation of developed systems and models. In addition, a portion of the funds was utilized to support research dissemination activities including preparation of research publications, documentation of research outcomes, and filing of intellectual property such as copyrights and patents.

Overall, the financial support provided by the institute enabled faculty members to effectively carry out research activities, develop innovative solutions, and contribute to scholarly publications and intellectual property generation, thereby strengthening the department's research culture and academic output.

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	EL-1 Basic Ele	3	50MHz DSO, 1	24 Hrs/Week	Mr. Balkrishna	Lab Assistant	Diploma Indust
2	EL-2 Micropro	3	8085 Developn	10 Hrs/Week	Mr Ganesh Raj	Lab Assistant	MSc Physics
3	EL-3 Digital &	3	50MHz DSO,	10 Hrs/Week	Mr Jagan Shika	Lab Assistant	Diploma E&TC
4	EL-4 Electroni	3	50MHz DSO, 1	24 Hrs/Week	Mrs Harshali N	Lab Assistant	Diploma E&TC
5	EL-5 Digital Sig	1	HP all in one d	22 Hrs/Week	Mr Nishigandh	Lab Assistant	MCA
6	EL-6 IoT & VL	1	HP all in one d	22 Hrs/Week	Mr Nishigandh	Lab Assistant	MCA

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	Component Store	Various electronic components, PCB, boards, & other hardware parts	To make available required electronic components to students	All students. (for hands-on learning experiences & rapidly prototype)	PO3, PO5, PSO1
2	Moku Go Hardware	Moku Go M2 kits	To educate students to handle modern instruments	All students	PO5, PO12, PSO2
3	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
4	Circuit Simulation and layout creation	Software for circuit simulation and layout creation 1. Circuit Maker 2. Tina Pro	For circuit simulation and PCB layout preparation	For Students Projects	PO5, PO12, PSO1, PSO2
5	PCB Prototype Machine	PCB Prototype Machine enables quick PCB fabrication by avoiding traditional etching and drilling steps	To prepare PCB of designed circuit	For Students Projects	PO5, PO6, PO7, PO8, PO9, PO12, PSO2
6	Self-explanatory Charts	Charts	Better understanding of concepts	All students	PO12, PSO1
7	Departmental Library	Technical Books, Datasheets, Project reports	Provide students access to books and project reports of previous academic years	Learning and understanding the concept of projects	PO12, PSO1
8	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	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO11, PO12, PSO1, PSO2
9	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

10	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
11	Turnitin / Copy leaks Plagiarism Software	Turnitin / 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
12	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
13	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
14	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
15	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, PO5, PO10, PSO2
16					

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

Institute Marks : 10.00

A. Maintenance Policy

The Electronics and Telecommunication Engineering Department follows a clear and systematic maintenance policy to keep all laboratory equipment in good working condition. The main aim of the policy is to ensure safe usage of equipment, avoid sudden breakdowns, and provide smooth conduct of practical sessions.

Regular checking, cleaning, and testing of equipment are carried out throughout the academic year. Calibration and performance verification are done whenever required. Each laboratory maintains a maintenance log book to record inspection details, faults, repairs, and corrective actions. The technical staff are responsible for monitoring the condition of equipment and reporting any issues immediately. This policy helps in maintaining safety, reliability, and uninterrupted laboratory activities.

B.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.

C. Overall Ambiance

The Electronics and Telecommunication Engineering Department ensures a clean, safe, and student-friendly laboratory environment. All laboratories are well-ventilated, properly illuminated, and arranged in an organized manner to provide a comfortable learning atmosphere. Adequate seating arrangements and sufficient working space are provided to students during practical sessions.

Safety instructions, Dos and Don’ts, and Standard Operating Procedures (SOPs) are clearly displayed in each laboratory. Fire safety equipment, first-aid boxes, and electrical safety measures are available to ensure a secure environment. Proper housekeeping practices are followed to maintain cleanliness and discipline in the laboratories.

The laboratories are equipped with required furniture, power supply arrangements, internet connectivity and proper storage facilities for instruments and components. The overall ambience supports effective teaching–learning, practical experimentation, and safe laboratory operations.

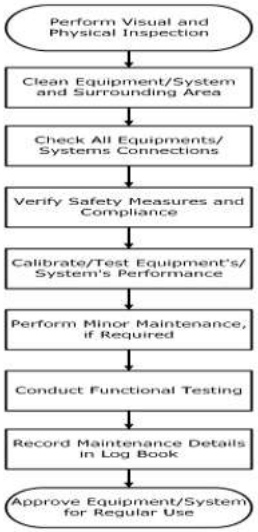


Figure 7.3.1: Preventive Maintenance Flowchart

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	EL-1 Basic Electronics 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
2	EL-2 Microprocessor & Embedded Systems 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.
3	EL-3 Digital & Logic Circuits Lab/ Microwave & Antenna 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.
4	EL-4 Electronic Devices & Circuits 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.
5	EL-5 Digital Signal Processing 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.
6	EL-6 IoT & VLSI 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	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	Research 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.
9	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 Electronics and Telecommunication 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** The Electronics and Telecommunication Engineering Department has established a dedicated Project Laboratory to support student project work. The laboratory provides facilities for system design, hardware implementation, testing, validation, and demonstration of projects. It is equipped with essential electronic test and measurement instruments, embedded development boards, PCB prototyping facilities, and adequate computing systems. Software tools such as MATLAB, Xilinx, IE3D, TINA-Pro, and Circuit Breaker are available for design, simulation, and analysis. Open-source platforms including LaTeX, Scilab, and Google Colab are used for coding, documentation, and project-related learning. Details of completed projects are documented in Section 2.2(D) of the Self-Assessment Report (SAR). **Utilization** The Project Laboratory is systematically utilized throughout the academic year for execution of student projects. Students use the laboratory for requirement analysis, system design, circuit realization, hardware integration, testing, troubleshooting, and performance validation. The facility is also used for prototype development, experimental verification of results, and final project demonstrations before evaluation panels. Faculty members regularly monitor progress, conduct review meetings, and guide students during validation and performance assessment stages. Laboratory usage is planned according to project schedules to ensure effective sharing of infrastructure among student groups. **Relevance to POS/PSOs: PO3, PO4,PO5, PSO1, PSO2**

S.N.	Name of the Laboratory
2.	**Research Laboratory** The Electronics and Telecommunication Engineering Department has established a Research Laboratory to support advanced learning, analytical studies, and interdisciplinary activities. The laboratory provides facilities for modelling, simulation, data analysis, and validation of engineering concepts. It is equipped with computing systems and necessary software tools to support work in signal processing, communication systems, embedded systems, and interdisciplinary areas involving electronics and computing domains. The laboratory provides an environment for students to verify theoretical concepts through simulation and analysis. **Utilization** The Research Laboratory is utilized by students for simulation-based learning, analytical studies, and interdisciplinary projects. Students perform system modelling, run simulations, analyze outputs, and evaluate system performance under different conditions. The facility is also used for research assignments, technical paper preparation, and improvement of project quality through detailed analysis and validation. Faculty members guide students in result interpretation, performance comparison, and preparation of technical reports. The laboratory encourages students to explore advanced and interdisciplinary topics beyond the regular curriculum. **Relevance to POS/PSOs: PO4, PO5, PSO1, PSO2**

S.N.	Name of the Laboratory
3.	**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 for Drone and Robotics** to promote advanced learning, innovation, and skill development. It includes specialized facilities such as the Drone Lab and Robotics 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 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. 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. **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

S.N.	Name of the Laboratory
	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 CO's 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 • Added ethics and 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

Batch 2021-2025

Table No. 8.1.1.2 Target and Attainment Level of CO for 2021-2025.

First Semester															
Subjects	C101T	C102T	C103T	C104T	C105T	C106L	C107L	C108L	C109L						AVG.
Target Level	1.50	1.30	1.50	1.50	1.50	2.25	2.25	2.25	2.25						1.81
Co Attainment	1.53	1.37	1.74	1.76	1.76	2.48	2.35	2.43	2.44						1.98
Actions :	CO Attainment > Target Level														
Second Semester															
Subjects	C110T	C111T	C112T	C113T	C114T	C115T	C116L	C117L	C118L	C119L	C120L				AVG.

Target Level	1.30	1.50	1.30	1.50	1.50	1.50	2.25	2.25	2.25	2.25	2.25				1.80
Co Attainment	1.49	2.22	1.43	1.89	1.73	2.01	2.34	2.11	2.81	2.57	1.37				2.00
Actions :	CO Attainment > Target Level														
Third Semester															
Subjects	C201T	C202T	C203L	C204T	C205L	C206T	C207L	C208T	C209L	C210L	C211L				AVG.
Target Level	1.50	1.50	2.25	1.50	2.25	1.50	2.25	1.50	2.25	2.25	2.25				1.91
Co Attainment	1.78	1.83	2.56	1.79	2.09	1.7	2.17	1.9	2.67	2.65	2.96				2.19
Actions :	CO Attainment > Target Level														
Fourth Semester															
Subjects	C212T	C213T	C214L	C215T	C216L	C217T	C218L	C219T	C220L	C221L					AVG.
Target Level	1.50	1.50	2.25	1.50	2.25	1.50	2.25	1.50	2.25	2.25					1.88
Co Attainment	1.58	1.76	2.96	1.81	2.37	1.68	2.98	1.74	2.57	1.37					2.08
Actions :	CO Attainment > Target Level														
Fifth Semester															
Subjects	C301T	C302L	C303T	C304L	C305T	C306L	C307T	C308T	C309L	C310L	C311L	C312L	C313T	C314L	AVG.
Target Level	1.50	2.25	1.50	2.25	1.50	2.25	1.50	1.50	2.25	2.25	2.25	2.25	1.50	2.25	1.93
Co Attainment	1.69	2.97	2.12	2.64	1.86	2.89	2.94	2.39	2.57	1.70	2.94	1.35	1.85	2.17	2.29
Actions :	CO Attainment > Target Level														
Sixth Semester															
Subjects	C315T	C316L	C317T	C318L	C319T	C320L	C321T	C322L	C323L	C324L	C325T	C326L			AVG.
Target Level	1.50	2.25	1.50	2.25	1.50	2.25	1.50	2.25	2.25	2.25	1.50	2.25			1.94
Co Attainment	1.77	1.96	1.88	2.88	1.66	2.65	2.30	2.98	2.98	2.97	2.05	2.97			2.42
Actions :	CO Attainment > Target Level														
Seventh Semester															
Subjects	C401T	C402L	C403T	C404L	C405T	C406L	C407L	C408L	C409L	C410T					AVG.
Target Level	1.50	2.25	1.50	2.25	1.50	2.25	2.25	2.25	2.25	1.50					1.95
Co Attainment	2.37	2.97	1.85	2.97	1.95	2.39	2.97	2.96	2.97	2.73					2.61
Actions :	CO Attainment > Target Level														
Eighth Semester															
Subjects	C411T	C412T	C413T	C414T	C415L										AVG.
Target Level	1.50	1.50	1.50	1.50	2.25										1.65
Co Attainment	2.88	1.83	2.59	2.60	2.96										2.57
Actions :	CO Attainment > Target Level														

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

Institute Marks : 20.00

2021-22 Batch

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

For POs

Table No. 8.1.2.1: Target of PO Attainment Based on Average Mapping**.**

PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Mapping	2.33	1.97	1.71	1.67	1.79	2.43	1.6	1.74	1.53	1.49	1.13	1.44
Average	1.70											

- For the POs mapping with more than 70% of courses the target is 1.8,
- For the POs mapping with 50% to 70% courses the target is 1.7,
- For the POs mapping with less than 50% courses the target is 1.6.

For PSOs

Table No. 8.1.2.2 Target of PSO Attainment Based on Average Mapping**.**

PO	PSO1	PSO2
Mapping	1.56	1.45
Average	1.50	

- For the PSOs mapping with more than 70% of courses the target is 1.6,
- For the PSOs mapping with 50% to 70% courses the target is 1.5,
- For the PSOs mapping with less than 50% courses the target is 1.4.

Table No. 8.1.2.3 Target Level and Attainment Level of PO for 2021-2025.

POs	**Target Level**	**Attainment Level**	**Observations**
PO1: Engineering Knowledge			
PO1	**1.80**	**1.89**	Target Achieved
Action 1: Extra classes conducted related to basic engineering. **Action 2:** Practice assignments on fundamental engineering topics was provided. **Action 3**: Remedial classes were conducted for slow learners. **Action 4**: Guest Lectures planned for better understanding of fundamentals. **Action 5**: Use virtual lab experiments, quiz, and practical examples to improve conceptual clarity.			
PO2: Problem Analysis			
PO2	**1.80**	**1.63**	Target Not Achieved
Action 1: Analytical based teaching adopted. **Action 2:** Encourage students to participate in Moodle quiz and problem-solving activities. **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	**1.80**	**1.51**	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/SWAYAM Videos.			
PO4: Conduct Investigations of Complex Problems			
PO4	**1.80**	**1.45**	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	**1.80**	**1.54**	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:** Encourage students to use **simulation software.**			
PO6: The Engineer and Society			
PO6	**1.60**	**2.33**	Target Achieved
Action 1: Encouraged participation in social outreach programs under NSS activities. **Action 2:** Organize seminars on Patent & intellectual property rights. **Action 3:** Incorporated projects addressing local community needs. (renewable energy, water, waste management)			
PO7: Environment and Sustainability			
PO7	**1.60**	**1.63**	Target Achieved
Action 1: Students were engaged 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. **Action 3:** Encourage final-year projects, hackathons, and innovation labs targeting renewable energy, recycling, and sustainable materials. **Action 4:** Attended 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	**1.60**	**1.75**	Target Achieved
Action 1: Seminar on Bridging the Gap between Academia and Industry. **Action 2:** Engineering ethics subjects incorporated in syllabus. **Action 3:** Conduct seminars/workshops on professional ethics and integrity. **Action 4:** Include ethics-based questions in exams and assignments.			
PO9: Individual and Team Work			
PO9	**1.60**	**1.42**	Target Not Achieved
Action 1: A Seminar on Entrepreneurship Development and Project-Based Learning is conducted. **Action 2:** Introduce group projects with peer evaluation components. **Action 3:** Recognize and reward effective teamwork in project evaluation. **Action 4:** Assign multidisciplinary projects involving collaboration across departments. **Action 5:** Encourage participation in student clubs and professional societies.			
PO10: Communication			
PO10	**1.80**	**1.42**	Target Not Achieved
Action 1: Encourage publication of student newsletters, and technical magazines. **Action 2:** Seminar on Bridging the Gap between Academia and Industry. **Action 3:** Seminar on Project-Based Learning. **Action 4:** Conduct technical writing workshops and LATEX report preparation training. **Action 5:** Include oral presentations as part of project/course evaluation. **Action 6:** Organize mock interviews and group discussions for communication practice.			
PO11: Project Management and Finance			
PO11	**1.60**	**1.22**	Target Not Achieved
Action 1: Encourage students to take roles in organizing departmental events with budgets. **Action 2:** The seminar on Project-Based Learning have been conducted to attain the PO11. **Action 3:** Collaborate with industry for real-world project management case studies. **Action 4:** Introduce mini-projects with budgeting and resource planning.			
PO12: Life-long Learning			
PO12	**1.80**	**1.34**	Target Not Achieved
Action 1: Assignments are given for every course. **Action 2:** Activities are prepared for each course. **Action 3:** Internship/ industrial training done by the students. **Action 4:** Promote MOOCs, online certifications, and self-learning platforms. **Action 5:** Encourage participation in conferences, seminars, and workshops.			

Table No. 8.1.2.4 Target Level and Attainment Level of PSO for 2021-2025.

PSOs	Target Level	Attainment Level	Observations
PSO1: Apply core principles of Electronics and Telecommunication engineering, including devices, circuits, signal processing, communication systems, and embedded platforms, to analyze and solve real-world engineering problems.			
PSO1	**1.60**	**1.44**	Target Not Achieved
Action 1: Integrated Advanced Engineering Tools like MATLAB/CISCO pack tracer/Scilab in labs for hands-on proficiency. **Action 2:** Semester Project & Capstone projects focused on Embedded System, Communication & IoT design and development. **Action 3:** Facilitated internships, industrial visits, and live projects through MoUs with manufacturing firms.			
PSO2: Design, simulate, and implement Electronics and Telecommunication solutions using modern software tools, programming environments, and embedded platforms for industry-relevant applications.			
PSO2	**1.60**	**1.43**	Target Not Achieved
Action 1: Encouraged students for hackathons, and startup incubation programs that encourage creative problem-solving and business model development. **Action 2:** Strengthened Industry Linkages by facilitating collaborations, and industry/society related projects to align students with societal needs. **Action 3:** Promoted Discipline & Professional Ethics. **Action 4:** Integrated modules on professional conduct, time management, and ethical responsibility into academic and co-curricular activities. **Action 5:** Practical conducted using Virtual Lab.			

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.

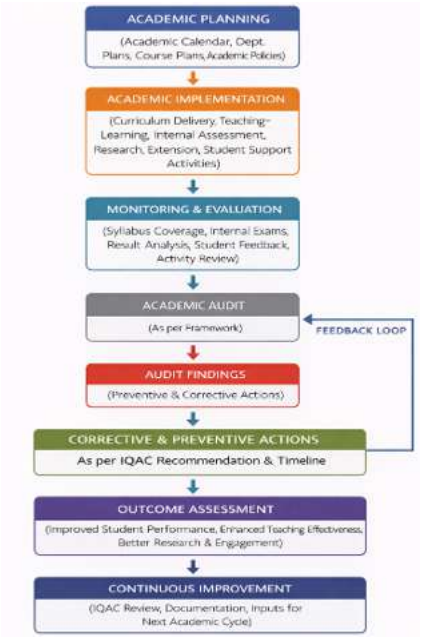


Figure 8.2.1: Academic Audit and Continuous Improvement Framework.

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 COs–POs–PSOs 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 and it is carried out twice in year as per format given in table no 8.2.3.

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	Description	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:

- Curriculum Design & Implementation
- Teaching–Learning Process
- Assessment & Evaluation
- COs–POs–PSOs Mapping and Attainment
- Faculty Development & Research
- Student Support & Progression
- Infrastructure & Learning Resources
- Industry Interaction & Innovation
- Feedback Systems
- 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	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:			

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.
2.

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, as shown in table no 8.2.4. 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 In charge & 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	7.00	8.00	8.00
No. of publications in peer reviewed journals	13.00	7.00	5.00
No. of publications in conferences	6.00	23.00	5.00

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)	6.55	6.67	5.17
Academic Performance Index (API) of the Second-Year Students in the Program (Refer to section 4.4)	6.91	6.06	5.86
Academic Performance Index (API) of the Third-Year Students in the Program (Refer to section 4.5)	6.93	6.51	5.30

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. 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 I	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 I	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	Softskill	Assistant Professor	06/08/2012	Yes	Regular	
Mr. Rathod Nin	CILPR8064E	M.Phil	No	12/10/2014	Health 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	
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 Sui	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	
Minakshi Hans	FQYPP5302K	M.E.	Yes	31/05/2025	Information Technology	Assistant Professor	14/07/2025	Yes	Regular	
Mr. Patil Manoj	APBPP3815L	M.Tech	Yes	28/07/2005	Thermal and Fluids Engineering	Assistant Professor	15/07/2006	Yes	Regular	
Dr. 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 E	DCPPB3984N	M.Tech	Yes	22/06/2023	Mechanical Engineering	Assistant Professor	28/08/2025	Yes	Regular	
Dr. Jamadar Pr	ALZPJ7551M	Ph.D	Yes	03/10/2025	General Mechanical	Assistant Professor	01/08/2011	Yes	Regular	
Mrs. Tejal Raje	DBKPG6377J	M.Tech	Yes	14/12/2020	Computer Science and Engineering	Assistant Professor	17/08/2023	Yes	Regular	
Dr. Kalpesh An	ACFPI6052B	M.Sc. and Ph.D. (Chemistry)	No	15/07/2021	Chemistry	Assistant Professor	22/09/2010	Yes	Regular	
Ms. Amerah Ba	AWVPA4225C	M.E.	Yes	12/10/2018	Computer Science and Engineering	Assistant Professor	01/04/2023	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.

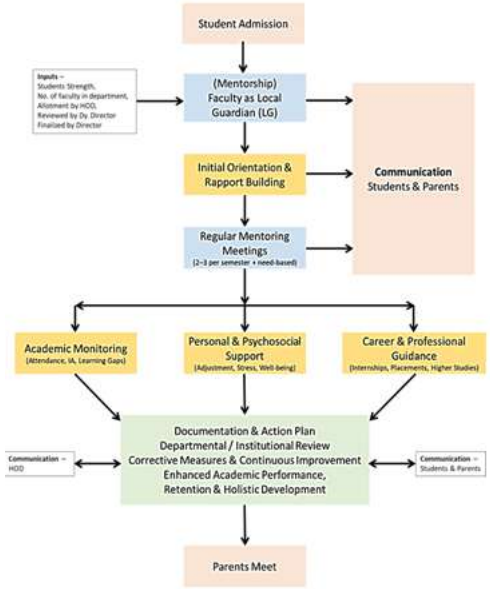


Figure 9.2.1: Structure and Process of the Local Guardian Mentoring System

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.

9.3.1 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.

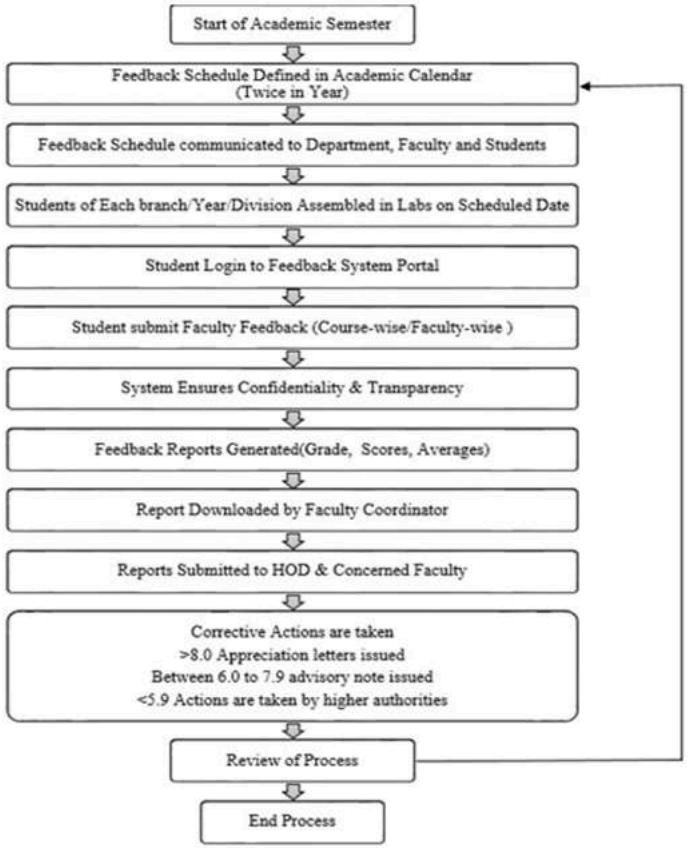


Figure 9.3.1.1: Process Flowchart for Student feedback system

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

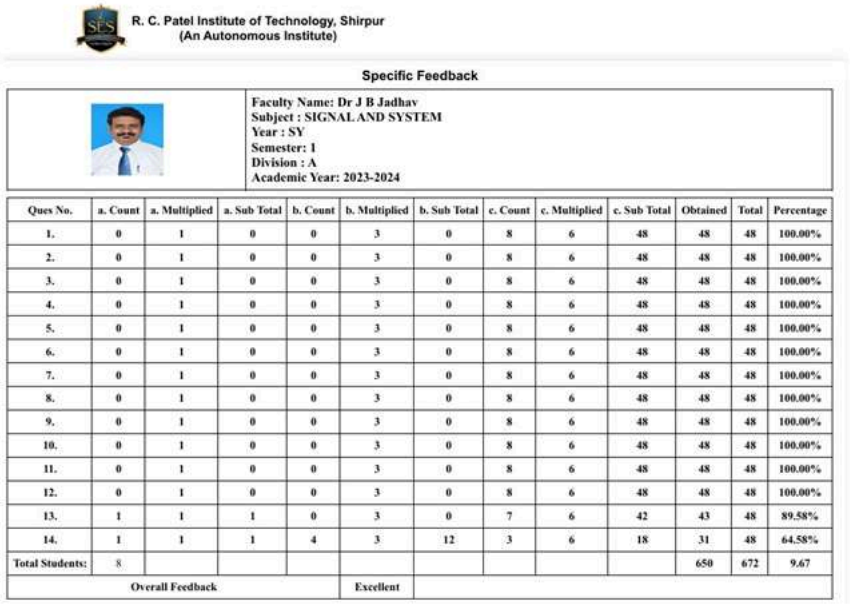
1. Does the teacher come well prepared for the class?
   a. Never b. Sometimes c. Always
2. The teachers English, Presentation and teaching skills are
   a. Unsatisfactory b. Satisfactory c. Good
3. How is the teacher's voice?
   a. Not audible b. Difficult to hear c. Loud & Clear
4. How the teacher 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)

Specific Feedback

Faculty Name: Dr J B Jadhav
Subject : SIGNAL AND SYSTEM
Year : SY
Semester: I
Division : A
Academic Year: 2023-2024

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	8	6	48	48	48	100.00%
2.	0	1	0	0	3	0	8	6	48	48	48	100.00%
3.	0	1	0	0	3	0	8	6	48	48	48	100.00%
4.	0	1	0	0	3	0	8	6	48	48	48	100.00%
5.	0	1	0	0	3	0	8	6	48	48	48	100.00%
6.	0	1	0	0	3	0	8	6	48	48	48	100.00%
7.	0	1	0	0	3	0	8	6	48	48	48	100.00%
8.	0	1	0	0	3	0	8	6	48	48	48	100.00%
9.	0	1	0	0	3	0	8	6	48	48	48	100.00%
10.	0	1	0	0	3	0	8	6	48	48	48	100.00%
11.	0	1	0	0	3	0	8	6	48	48	48	100.00%
12.	0	1	0	0	3	0	8	6	48	48	48	100.00%
13.	1	1	1	0	3	0	7	6	42	43	48	89.58%
14.	1	1	1	4	3	12	3	6	18	31	48	64.58%
Total Students:	8									650	672	9.67
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.

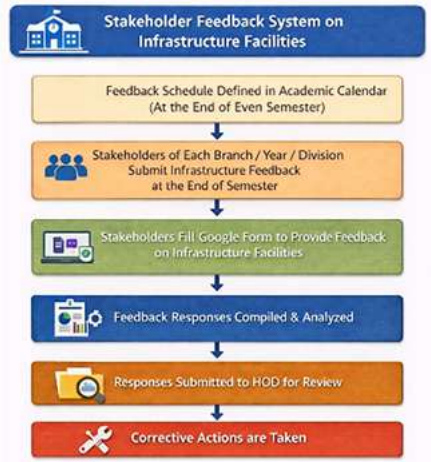


Figure 9.3.2.1: Mechanism for Student Feedback on Infrastructure Facilities

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			
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			

Sr. No	Statement	1	2	3
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)

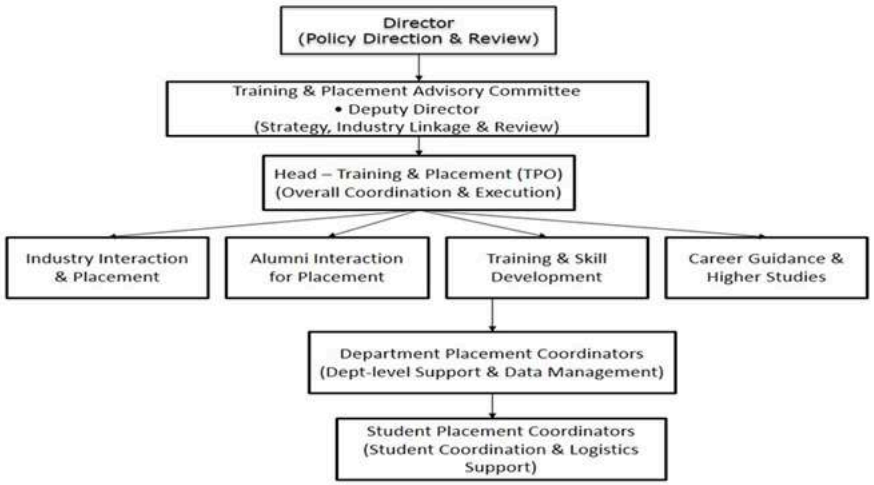


Figure 9.4.1: Training and Placement Cell – Organizational Hierarchy

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.

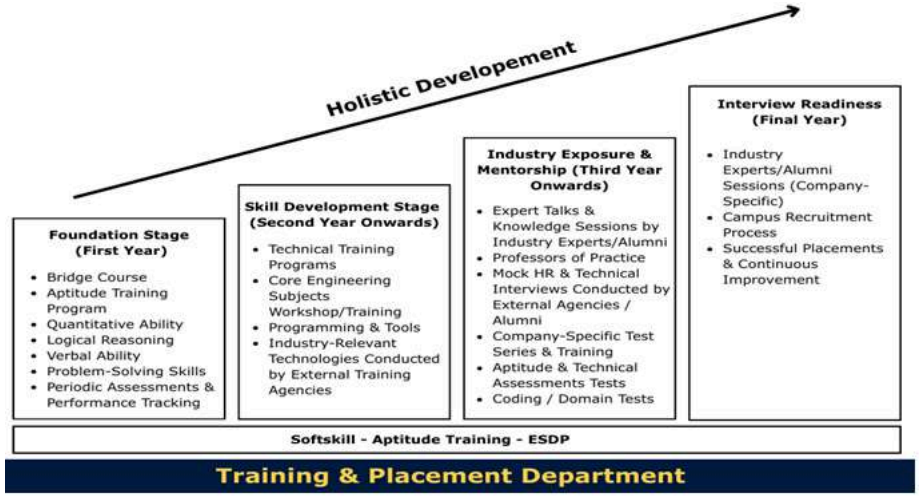


Figure 9.4.2: Training and Placement Framework for Holistic Development

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, Fullstack • 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
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

Sr. No	Trainer Name	Skill Specialization
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
14	Mr. Prashant Shinde	Technical IT
15	Mr. Ganesh Bhosle	Verbal and Soft Skill
16	Mr. Rakesh Palkhe	Verbal and Soft Skill
17	Mr. Noor Ahmad	Programming and Coding
18	Mr. Jivan Jyoti	Programming and Coding
19	Mr. Pavan Kumar Rao	Japanese language
20	Ms. 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, ommunication, 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
12	Future Skills Development Program	Future Skills Development	Final Year	Symbiosis FSD

Sr. No	Name of Training Activity / Program	Skills / Focus Area	Target Students	Resource Person / Agency
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
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)	Department and T&P Level	FY/SY/ TY/B.Tech

Sr No	Activity (Training /soft skill)	Month and Duration	No of Hours	Target Students
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
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

Sr. No.	Name of The Recruiter	Program participated	On/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
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

Sr. No.	Name of The Recruiter	Program participated	On/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
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

Sr. No.	Name of The Recruiter	Program participated	On/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
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

Sr. No.	Name of The Recruiter	Program participated	On/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
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

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
87	Techbean	E&TC,Electrical	On Campus
88	Lumax	E&TC,Electrical	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
19	Sutherland	Comp,DS,E&TC,Civil,Electrical,Mechanical	On Campus
20	IBM	Comp,DS,E&TC,Electrical	Off Campus

Sr. No.	Name of The Recruiter	Program participated	On/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
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

Sr. No.	Name of The Recruiter	Program participated	On/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
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

Sr. No.	Name of The Recruiter	Program participated	On/Off 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
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

Sr. No.	Name of The Recruiter	Program participated	On/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
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

Sr. No.	Name of The Recruiter	Program participated	On/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,Mechanical	On Campus
20	Green Design	Civil	On Campus
21	Atos	Comp,E&TC,Electrical,Mechanical	On Campus
22	Smyle Housing Development	Civil,	On Campus
23	Webtech	Comp,E&TC,Electrical,Mechanical	On Campus
24	Mungi Engineers	Electrical,Mechanical	On Campus
25	RecruitCRM	Comp	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

Sr. No.	Name of The Recruiter	Program participated	On/Off 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
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.
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.

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

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

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

Figure 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. (Refer Figure 9.5.3). 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

Sr. No.	AY	Name of Competition	Level	Organizing Agency	Achievement / Position	Outcome
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

R. C. Patel Institute of Technology (RCPIT), Shirpur, has formulated a comprehensive Institutional Strategic Plan and Institutional Development Plan (IDP) for the period 2023-2030, aligned with its Vision, Mission, and Outcome-Based Education (OBE) framework.

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).

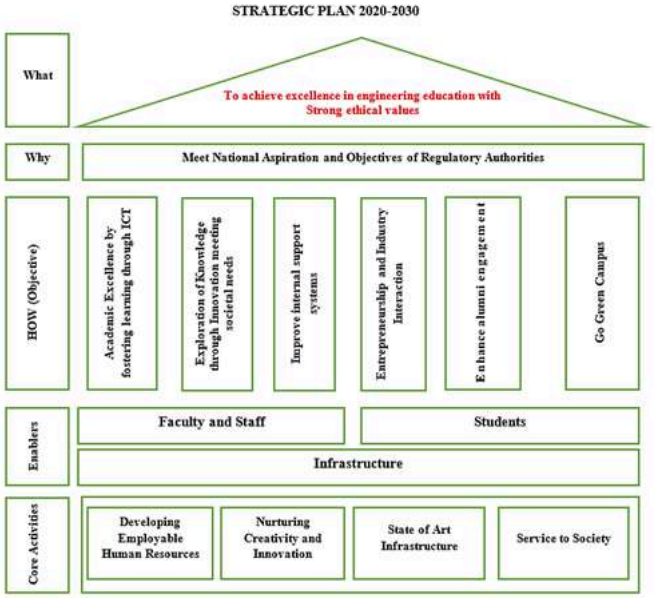


Figure 9.6.1.1: Institutional Strategic Planning Framework (2020–2030)

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
2	Exploration of Knowledge through Innovation meeting societal needs
3	Improve Internal Support Systems

Sr. No	Strategic Plan
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.
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
Innovation and Entrepreneurship	Exclusive incubation facility
	Proactive participation of Students and Faculty
	Focus on Product development
Resources & Infrastructure	Exclusive facility for R&D
	Licensed Technologie

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).

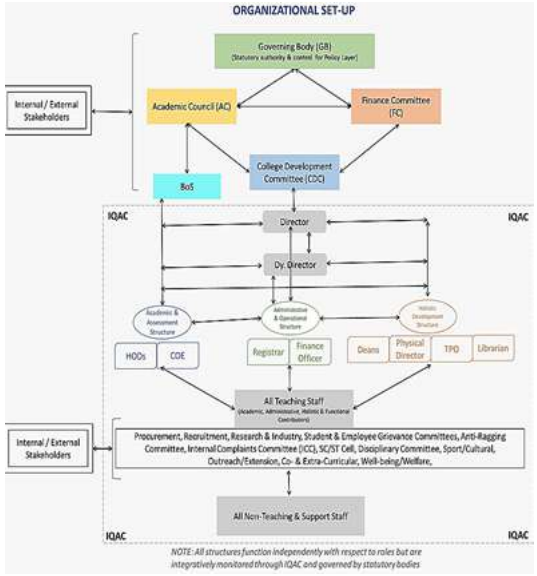


Figure 9.6.2.1: Governance, Leadership and Institutional Support Structure of the Institution

- 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	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	157850	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	203955	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	41828	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(	1418465	1950000	179577(	266000(	258036(
Library	301000(	2144543	390000	365810.(	475000	428611.(	600000	562977.(

Laboratory equipment	193130(	1376081	180000(	1633478	4000000	374041(	203000(	1942207
Teaching and non-teaching staf	200133(	1485989	260500(	2580216	2440000	2399152	208300(	2062747
Outreach Programs	150500(	1072272	100000	93515.0(	250000	236479.(	44000	41828.0(
R&D	263400(	1876475	260000	220720.(	200000	190765.(	44000	41417.4(
Training, Placement and Indust	903000(	643363(	750000(	714241(	7200000	683904(	323000(	3035586
SDGs	653360(	4557154	620000(	5892102	7000000	637355(	764000(	7069269
Entrepreneurship	169300(	120630(	150000	139055.(	175000	168410.(	142000	133549.(
Others, specify	165840(	4691188	150000(	720000.(	7000000	270577(	400000(	4092368
Total	**375423000**	**265387223**	**379400000**	**356143592.53**	**352800000**	**335917998.69**	**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 59808271		Actual expenditure (till…): 42278578.73		Total No. Of Students 498
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
61008271	59808271	42278578.73	69.30	84896.74

Table 2 :: CFYm1

Total Budget 69177581		Actual expenditure (till…): 64937143.16		Total No. Of Students 514
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
71177581	69177581	64937143.16	91.23	126336.85

Table 3 :: CFYm2

Total Budget 69029349		Actual expenditure (till…): 65726192.85		Total No. Of Students 460
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
71029349	69029349	65726192.85	92.53	142883.03

Table 4 :: CFYm3

Total Budget 62447130		Actual expenditure (till…): 59309839.14		Total No. Of Students 483
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
64447130	62447130	59309839.14	92.03	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	3076735	2192222	3282014	2978388	7826456	7318557	4034938	3860437
Software	398272.5	3719566	6381696	6306282	9783071	9098127	9938271	8134212
SDGs	1040861	7259957	1130471	1074331	1369629	1247059	1518567	1405126
Support for faculty developmen	79654.5	7646833	1458673	1312806	1565291	1408762	9938272	9540741
R & D	419619.5	2989394	4740688	4024480	3913228	3732535	874568	823236
Industrial Training, Industry exp	1438560	1024935	1367506	1302305	1408762	1338136	6420123	6033695

Miscellaneous Expenses*	0	0	0	0	0	0	0	0
Total	**15821456.80**	**11224480.20**	**16211330.27**	**15258598.61**	**17061675.88**	**15628597.65**	**17333140.75**	**15957738.08**

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/-
10	Area (In Sqm.)	801 sq. m.
11	Reading Room Capacity	150
12	Reprographic Facility	Available

Sr. No.	Particulars	Details
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.

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 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

Sr. No.	Details	2023-24	2024-25	2025-26
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		

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)

Sr. No.	Particulars	Details
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.

9.10 E-Governance (5) Total Marks 5.00

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. (Refer Figure 9.10.1)

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.

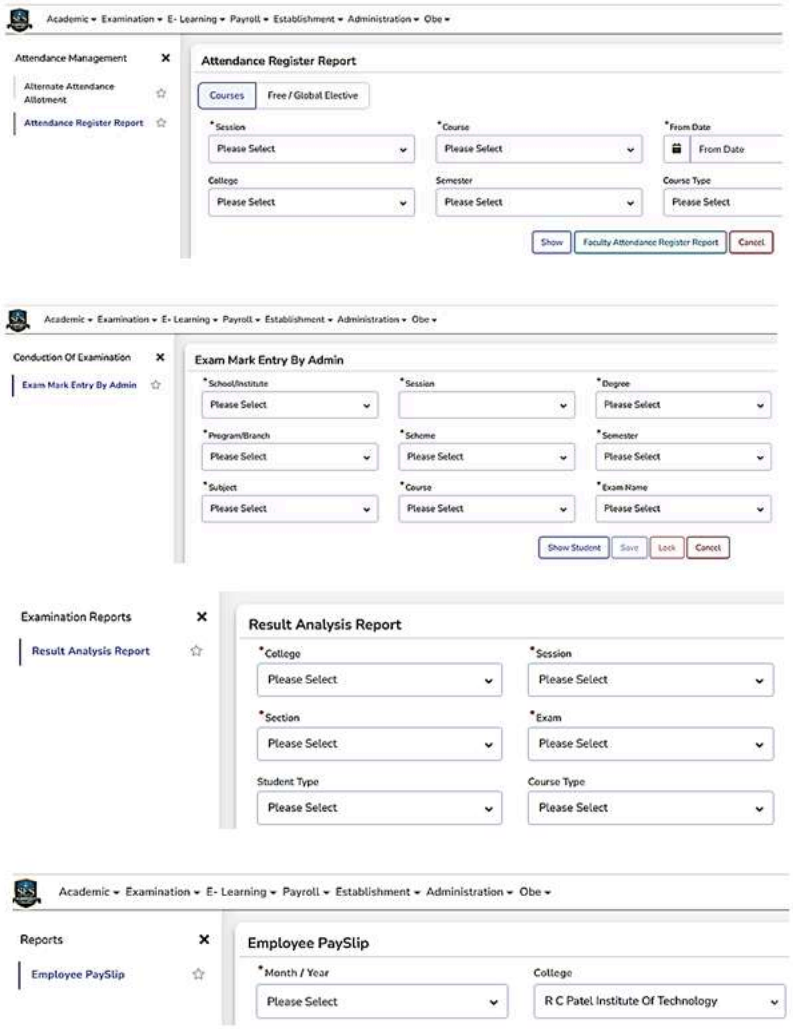


Figure 9.10.1: Mastersoft Enterprise Resource Planning (ERP) Modules

- **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
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

Sr. No.	Activity / Project Title	SDG(s) Mapped	PO Mapped	Description / Implementation Details	Application Area / Domain	Learning Outcome / Impact
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
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

Sr. No.	Activity / Project Title	SDG(s) Mapped	PO Mapped	Description / Implementation Details	Application Area / Domain	Learning Outcome / Impact
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.
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

Sr. No.	Activity / Project Title	SDG(s) Mapped	PO Mapped	Description / Implementation Details	Application Area / Domain	Learning Outcome / Impact
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: (Refer Figure 9.13.2)

- 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

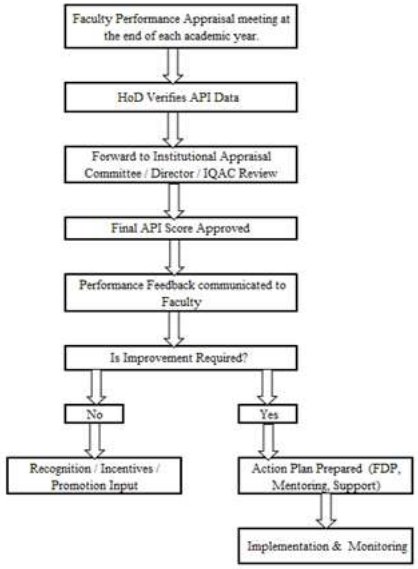


Figure 9.13.1: Faculty Performance Appraisal and Feedback Mechanism

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					
2	FY [F]	EG	90	90	100.00					
3	FY [I]	EG	86	86	100.00					
4										
5						100.00	Excellent-1	20	20	20
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		
2	Career Counseling Admission	57	72		
3	Competitive Exam Preparation				
4	General Counseling	240	48		
5	Soft Skill Development of the Student			10	10
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

2.2(i) 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	Apprx Training for Faculty Members (Co-ordinator)	5	5	5
11	BoS Committee (Co-ordinator)	5	5	5
	TOTAL of 2.2(i)		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	PSEVC22DSCAT8	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	PEEKOOOAEOATB	YES	ICRAMM-2022	YES	22147853	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) AVISHKAR/ANY 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 20 POINTS)

SN	Title	Agency	Period	Type of Project	Grant Amount Mobilized (Rs. Lakh)	Are You Principal Investigator?	No. of Co-Investigators	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	ME/M.Phil/M.pharm			0	
TOTAL of 3.4B				10	10
TOTAL of 3.4				10	10

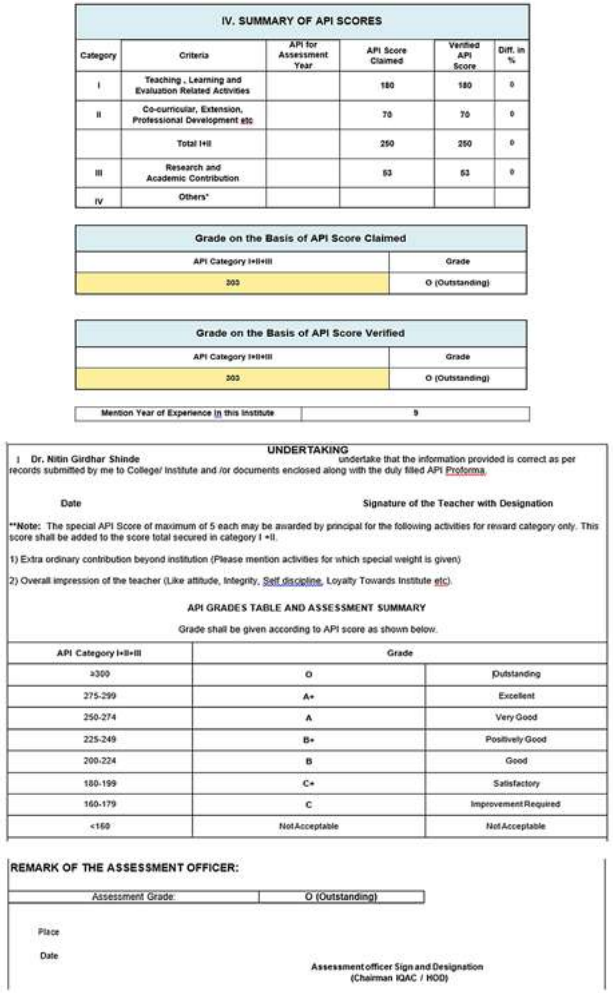
3.5) PATENT/IPR (MAXIMUM 15 POINTS)

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)

Figure 9.13.2 : Sample Academic Performance Indicator (API) Form

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 9.13.1.

Table 9.13.1: 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 9.13.2: 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
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

Grade	Award & Reward	Recognition	Counselling	Advisory Note / Action Plan
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
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

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
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
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

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
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
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

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
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
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

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
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
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.

Figure 9.14.1: Sample Outreach Activities

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.

Figure 9.14.2: Unnat Bharat Abhiyan Activities

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.

Figure 9.14.3: Photographs of Sample Outreach Activities

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	Engineering Fundamentals & Problem Solving: Apply core principles of Electronics and Telecommunication engineering, including devices, circuits, signal processing, communication systems, and embedded platforms, to analyze and solve real-world engineering problems
PSO2	Digital, Software & Embedded Competency: Design, simulate, and implement Electronics and Telecommunication solutions using modern software tools, programming environments, and embedded platforms for industry-relevant applications

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 11:56:11