

R C Patel Institute of Technology

SELF ASSESSMENT REPORT(TIER - I) FOR Computer Science and Engineering (Data Science)

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

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

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration
Computer Science and Engineering (Data Science)	UG	2020	2024	60	Yes	120	Applying first time	--	--	

Sanctioned Intake for Last Five Years for the Computer Science and Engineering (Data Science)

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

8 Programs to be considered for Accreditation vide this application:

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

Table No. A8.2

S No	Name of the Department	Name of the Program	Name of Allied Departments/Cluster	Name of Allied Program
1	Computer Science and Engineering (Data Science)	Computer Science and Engineering (Data Science)	Computer Engineering	Computer Engineering
2	Computer Science and Engineering (Data Science)	Computer Science and Engineering (Data Science)	Information Technology	Information Technology
3	Computer Science and Engineering (Data Science)	Computer Science and Engineering (Data Science)	Artificial Intelligence and Data Science	Artificial Intelligence and Data Science
4	Computer Science and Engineering (Data Science)	Computer Science and Engineering (Data Science)	Artificial Intelligence and Machine Learning	Artificial Intelligence and Machine Learning

9 Total Number of Faculty Members in Various Departments:

ID	Department 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	Department 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

Criteria 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	101.66
5	FACULTY INFORMATION	100	68.72
6	FACULTY CONTRIBUTIONS	120	95.00
7	FACILITIES AND TECHNICAL SUPPORT	100	100.00
8	CONTINUOUS IMPROVEMENT	80	80.00
9	STUDENT SUPPORT AND GOVERNANCE	120	116.00
	Total	1000	922

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	<p>To impart high quality Technical Education through:</p> <p>M1: Innovative and Interactive learning process and high quality, globally recognized instructional programs.</p> <p>M2: Fostering a collaborative scientific temper among students with ethical responsibility towards the society.</p> <p>M3: Preparing students from diverse backgrounds to have aptitude for employment, entrepreneurship and research with a spirit of professionalism.</p> <p>M4: To contribute to the nation's sustainable development.</p>								
Vision of the Department	To provide cutting-edge Computer Engineering education in Data Science while instilling socio-moral values.								
Mission of the Department	<table border="1"> <thead> <tr> <th data-bbox="220 803 331 878">Mission No.</th> <th data-bbox="331 803 951 878">Mission Statements</th> </tr> </thead> <tbody> <tr> <td data-bbox="220 878 331 943">M1</td> <td data-bbox="331 878 951 943">To deliver state-of-the-art ICT-enabled teaching and learning to achieve excellence in Data Science education.</td> </tr> <tr> <td data-bbox="220 943 331 1008">M2</td> <td data-bbox="331 943 951 1008">To develop professionally competent Data Science Engineers, meeting evolving industrial and societal needs.</td> </tr> <tr> <td data-bbox="220 1008 331 1073">M3</td> <td data-bbox="331 1008 951 1073">To prepare employable professionals with ethical values and a commitment to professional and social responsibility.</td> </tr> </tbody> </table>	Mission No.	Mission Statements	M1	To deliver state-of-the-art ICT-enabled teaching and learning to achieve excellence in Data Science education.	M2	To develop professionally competent Data Science Engineers, meeting evolving industrial and societal needs.	M3	To prepare employable professionals with ethical values and a commitment to professional and social responsibility.
Mission No.	Mission Statements								
M1	To deliver state-of-the-art ICT-enabled teaching and learning to achieve excellence in Data Science education.								
M2	To develop professionally competent Data Science Engineers, meeting evolving industrial and societal needs.								
M3	To prepare employable professionals with ethical values and a commitment to professional and social responsibility.								

1.1.2 State PEOs of the Program (5)

Institute Marks : 5.00

PEO No.	Program Educational Objectives Statements
PEO1	Graduates will achieve proficiency in Data Science and pursue lifelong learning to advance as professionals, entrepreneurs, and leaders.
PEO2	Graduates will operate effectively in diverse, dynamic professional and cultural environments, respecting societal perspectives.
PEO3	Graduates will demonstrate ethical values and social responsibility in their professional and personal lives.

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.

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.

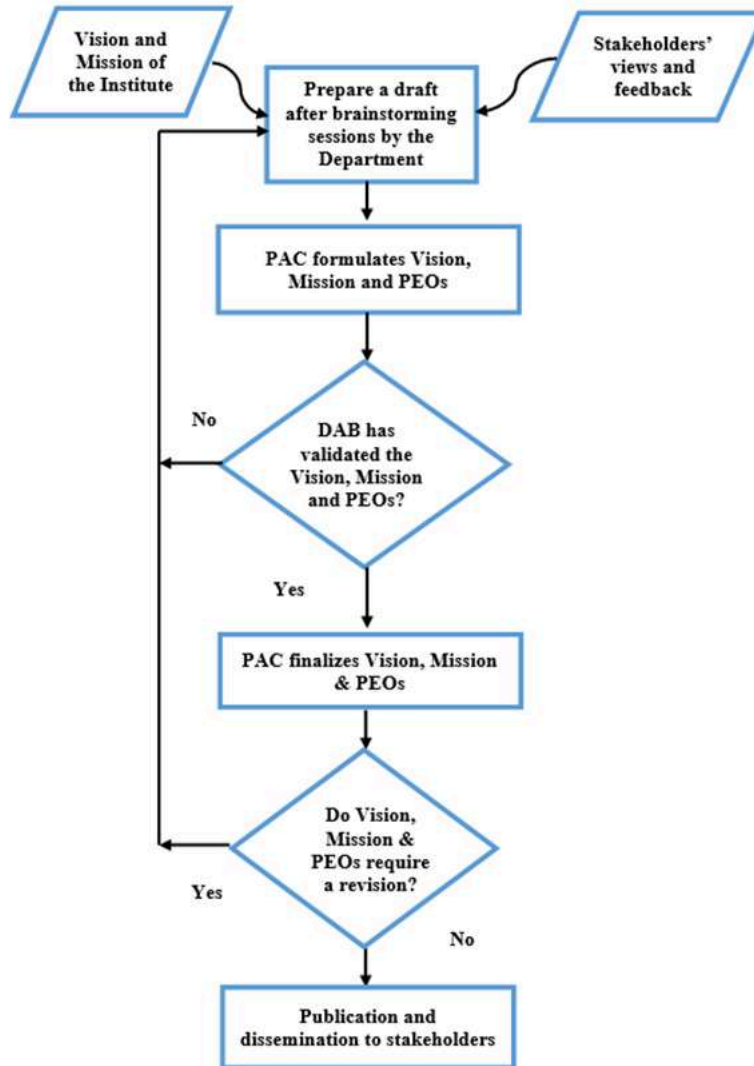


Figure 1.1.3.1: Process of Defining the Program Vision, Mission and PEOs

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 and Mission of the Institute

Publication of Vision and Mission of the Institute		Stakeholders
Mediums of Publication	<ul style="list-style-type: none"> Institute Website Social Media Platforms Institute Newsletter Institute Magazine Institute Information Booklet Training and Placement (T&P) Activity Report 	Internal and External Stakeholders
	<ul style="list-style-type: none"> Student Files and Reports Laboratory Manuals 	Internal Stakeholders
Methods of Display	<ul style="list-style-type: none"> Director's Office Administrative Office Auditorium T&P Office Canteen and Hostels 	Internal and External Stakeholders
	<ul style="list-style-type: none"> Central Facilities and Workshop Classrooms and Laboratories Notice Boards 	Internal Stakeholders
Methods of Dissemination	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Department Webpage Department Activity Report Department Newsletter and Magazine 	Internal and External Stakeholders
	<ul style="list-style-type: none"> Student Files, Reports Laboratory Manuals Faculty Diary 	Internal Stakeholders
Methods of Display	<ul style="list-style-type: none"> Head of Department (HoD) Cabin Faculty Cabin Prominent Places in the Department 	Internal and External Stakeholders
	<ul style="list-style-type: none"> Department Library Notice Boards Classrooms Laboratories 	Internal Stakeholders

Methods of Dissemination	<ul style="list-style-type: none"> • Induction Program • Alumni Interaction • PAC Meetings • DAB Meetings • Board of Studies (BoS) Meetings • Emails, Letters, and Correspondence • Parent-Teacher Meet 	Internal and External Stakeholders
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The Process of Dissemination of the Vision, Mission and PEOs among Stakeholders:

Online Presence:

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

Physical Displays in Campus:

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

Internal and External Communication:

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

Meetings:

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

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

PEO Statements	M1	M2	M3
Graduates will achieve proficiency in Data Science and pursue lifelong learning to advance as professionals, entrepreneurs, and leaders.	3	3	2
Graduates will operate effectively in diverse, dynamic professional and cultural environments, respecting societal perspectives.	2	3	3
Graduates will demonstrate ethical values and social responsibility in their professional and personal lives.	2	2	3

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

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 Mission of the Department.

Table No.1.1.5.2: Justification and Rationale of the Mapping of PEOs with Department Mission Statements

Mapping	Mission statements of program		
PEOs	M1: Deliver state-of-the-art ICT-enabled teaching and learning.	M2: Develop students into professionally competent Data Science engineers, meeting evolving industry and societal needs.	M3: Prepare employable professionals by fostering strong ethical values.
PEO1 Graduates will achieve proficiency in Data Science and pursue lifelong learning to advance as professionals, entrepreneurs, and leaders.	3- High: M1 focuses on Technical proficiency & lifelong learning through academic excellence Initiatives- ICT-enabled smart classrooms, Use of advanced Data Science tools (Jupyter, Tableau and AWS Academy, AWS Educate), Project-based and problem-based learning, case studies on real-world datasets, capstone projects in emerging domains. It provides lifelong learning support like promoting NPTEL / SWAYAM / Coursera certification, Value-added courses, Access to digital libraries (NDL, Springer), Technical workshops and FDP participation. It provides Research & Innovation Exposure through semester projects, Student paper publications, Hackathons and coding competitions. Graduates gain strong technical proficiency and develop habits of continuous learning.	3- High: M2 is oriented towards Professional competence & leadership development though placement oriented courses like Full Stack Development by R3sys, Wipro-TalentNext-students training for Java, Guest Lectures, and Value-added courses. It focuses on Leadership & Professional Growth by organizing technical events and symposiums through Student technical clubs (Data Polaris Club, Fetch.AI, Google Developer Students Club), Interdisciplinary projects and participation in national level competitions like Smart India Hackathon and AVISHKAR. Institute Innovation Cell (IIC) and Startup awareness workshops are initiatives aimed at fostering entrepreneurship.	2- Medium: M3 caters the need for Employability & ethical responsibility via efforts on Employability Enhancement like Aptitude and soft skills training by Mahindra Pride Nandi Foundation Barclays soft skill training, Resume building workshops, Mock interviews and placement training, Campus recruitment drives. Ethical & Professional Development is ensured through curriculum courses like Professional Business Communication and expert talks, and Social Awareness through Community-based Data Science projects and National Social Service (NSS) participation.

Mapping	Mission statements of program		
<p>PEO2</p> <p>Graduates will operate effectively in diverse, dynamic professional and cultural environments, respecting societal perspectives.</p>	<p>2- Medium: Students are introduced to diverse, dynamic professional and cultural environments through participation in Technical Competitions like Converges, Codechef weekly contests, Smart India Hackathons, Industry-Oriented Clubs and Training through Data Polaris, GDSC, Communicado clubs, Digital and Remote Learning via IIT Bombay Virtual Lab, Internships, Interdisciplinary projects and presentation activity.</p>	<p>3- High: Students perform activities meeting evolving industry and societal needs like competitions (Analytics India Magazine, MachineHack), Full Stack Certification with Symbiosis & Capgemini, AI tools awareness, regular placements with multinational companies (Capgemini, TCS, Quality Kiosk, Casepoint, Netwin), Foreign Language Courses, Alumni Talks, International Relations and Higher Studies Cell also contribute.</p>	<p>3- High: Employability and professional readiness are strengthened through internships, mock interviews, conference participation, foreign language certification, Full Stack certification programs, Municipal Staff AI training, initiatives of the International Relations and Higher Studies Cell, and Women Empowerment programs such as She Arise 2.0. Ethical awareness, cultural sensitivity, and respect for societal values are further instilled through the celebration of International Women's Day, Maharashtra Day, Kargil Vijay Diwas, Tree Plantation drives, Ganesh Visarjan Eco-Drives, and cultural festivals such as Garba, Aarambh, and similar events.</p>
<p>PEO3</p> <p>Graduates will demonstrate ethical values and social responsibility in their professional and personal lives.</p>	<p>2- Medium: Institute tries to instill ethics through academic excellence & ICT-enabled learning indirectly. Academic Integrity practices like the use of plagiarism software, and ethical use of datasets. Ethical and social values are introduced through courses like Universal Human Values, Indian Knowledge System, and Disaster Management and Preparedness.</p>	<p>2- Medium: M2 connects to PEO3 through responsible professional practice. Students engage in Industry projects addressing societal problems, Professional code of conduct workshops,</p> <p>Corporate ethics seminars, Guest lectures on workplace ethics, Data-driven solutions for local community issues, Environmental data analysis projects, Participation in Smart City / rural analytics initiatives, Interdisciplinary projects, Conflict resolution and leadership workshops.</p>	<p>3- High: Activities Fostering Strong Ethical Values and Social Commitment include Environmental Initiatives like Vihangam (Bird Feeders), observing the Constitution Day, Science Day, Shivswarajya Din, etc. Students do engage in Community service through National Social Service (NSS) and Samarpan Club activities like blood donation, grain donation, health awareness, cyber awareness, digital literacy, etc. Data Science programs are oriented towards social causes.</p>

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

Institute Marks : 10.00

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

A. Committees Involved in Curriculum Development

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

Program Assessment Committee:

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

Department Advisory Board:

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

Board of Studies:

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

Academic Council:

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

B. Step-by-Step Curriculum Revision Process

The development and revision process as outlined below:

Step 1: Feedback Collection and 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.

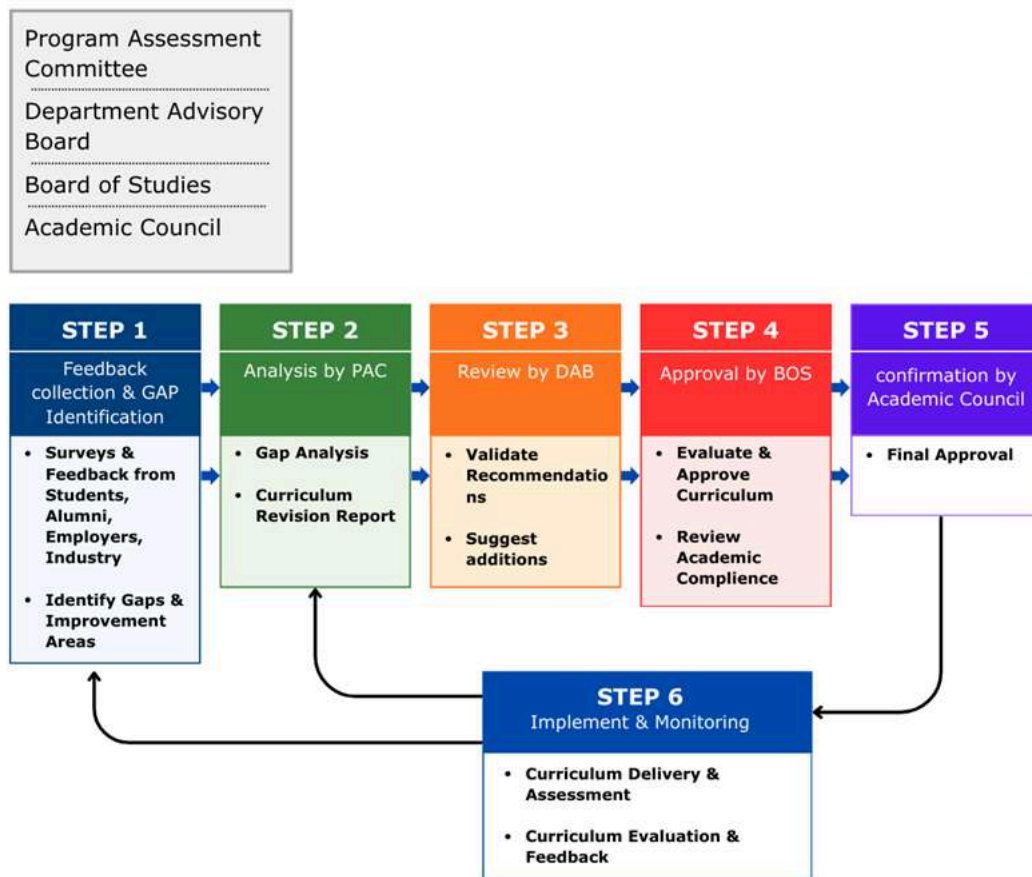


Figure 1.2.1.1: Process for Developing/Revising the Program Curriculum

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
1	Student Feedback	Students faced difficulty in coding	Online Coding Platform	PO1, PO2, PSO1, PSO2	Skill Gap	Hands on practice Codechef online coding platform	Implemented during semester
2	Alumni Interaction	Lack of clarity on practical challenges Kubernetes and Kafka	Big Data Lab	PO2 PO3, PO5, PSO2	Knowledge and Skills Gap	Alumni Interaction	Organized an Alumni Interaction
3	Exit Survey	Limited team collaboration experience	All project courses	PO8	Attitude/ Soft Skill Gap	Interdisciplinary Project Introduction	Introduced interdisciplinary project concept
4	Industry Expert	Limited exposure to real-world tools such as cloud platforms, Hadoop tools	Big Data Hadoop	PO1, PO2, PO4, PO5 PSO2	Skills Gap	Industry Expert Session	Industry Expert Session Conducted
5	Employer Feedback	Weak Communication & Presentation skills	Project, Interviews	PO9	Soft Skills Gap	TA activity Upgraded	Mock Interview and GD introduced in TA, Expert Session arranged
6	Industry Expert	Need of analytical foundation	Data Analysis	PO2, PO5	Skill Gap	Inclusion of Domain Specific Course	Fundamentals of Analysis course is shifted to FY and Data Engineering and Data Visualization Lab added in SY
7	Industry Expert	Insufficient exposure to industry relevant technologies	Language Models	PO1, PO2, PO3	Knowledge Gap	Revision in Syllabus	Syllabus Revised

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
8	Academic Result Analysis	Students faced difficulty in understanding Mathematical subject	Mathematical Courses	PO1	Knowledge Gap	Remedial classes conducted to strengthen fundamental concepts	Remedial completed

[Edit](#)

ID	Course Code	Course Title	Classroom Instruction (CI) (in hours per semester)		Lab Instruction (LI) (in hours per semester)	Term Work (TW) and Self Learning (SL) (TW+ SL) (in hours per semester)	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	2	30	1.00
7	C107	Engineering Mechanics Laboratory	0	0	28	2	30	1.00
8	C108	Basic Electrical Electronics Engineering Laboratory	0	0	28	2	30	1.00
9	C109	Language Proficiency- English Laboratory	0	0	28	2	30	1.00
10	C110	Workshop	0	0	28	2	30	1.00
11	C111	Engineering Mathematics-II	56	14	0	80	150	5.00
12	C112	Engineering Physics-II	28	0	0	32	60	2.00
13	C113	Engineering Chemistry-II	28	0	0	32	60	2.00
14	C114	Engineering Graphics	28	0	0	32	60	2.00
15	C115	Computer Programming	42	0	0	48	90	3.00
16	C116	Effective Communication Skill	28	0	0	32	60	2.00
17	C117	Engineering Science -II Laboratory	0	0	28	2	30	1.00
18	C118	Engineering Graphics Laboratory	0	0	28	2	30	1.00
19	C119	Computer Programming Laboratory	0	0	28	2	30	1.00

20	C120	Effective Communication Skills Laboratory	0	0	28	2	30	1.00
21	C201	Mathematics for Intelligent Systems	42	14	0	64	120	4.00
22	C202	Data Structures and Algorithms	42	0	0	48	90	3.00
23	C203	Data Structures and Algorithms Laboratory	0	0	28	2	30	1.00
24	C204	Foundations of Data Analysis	42	0	0	48	90	3.00
25	C205	Foundations of Data Analysis Laboratory	0	0	28	2	30	1.00
26	C206	Database Management Systems	42	0	0	48	90	3.00
27	C207	Database Management Systems Laboratory	0	0	28	2	30	1.00
28	C208	Statistics for Data Science	42	0	0	48	90	3.00
29	C209	Statistics for Data Science Laboratory	0	0	28	2	30	1.00
30	C210	Programming with Python Laboratory	0	0	28	2	30	1.00
31	C211	Semester Project-I	0	0	28	2	30	1.00
32	C212	Programming Language Principles	42	0	0	48	90	3.00
33	C213	Programming Language Principles Laboratory	0	0	28	2	30	1.00
34	C214	Machine Learning - I	42	0	0	48	90	3.00
35	C215	Machine Learning - I Laboratory	0	0	28	2	30	1.00
36	C216	System Fundamentals	42	0	0	48	90	3.00
37	C217	System Fundamentals Laboratory	0	0	28	2	30	1.00
38	C218	Design and Analysis of Algorithms	42	0	0	48	90	3.00
39	C219	Design and Analysis of Algorithms Laboratory	0	0	28	2	30	1.00
40	C220	Universal Human Values	28	0	0	32	60	2.00
41	C221	Web Engineering Laboratory	0	0	56	4	60	2.00
42	C222	Semester Project-II	0	0	28	2	30	1.00

43	C223	Employability Skill Development Program-I	0	0	28	2	30	1.00
44	C301	Machine Learning-II	42	0	0	48	90	3.00
45	C302	Machine Learning-II Laboratory	0	0	28	2	30	1.00
46	C303	Artificial Intelligence	42	0	0	48	90	3.00
47	C304	Artificial Intelligence Laboratory	0	0	28	2	30	1.00
48	C305	Information Security	42	0	0	48	90	3.00
49	C306	Information Security Laboratory	0	0	28	2	30	1.00
50	C307	Java and Scala Laboratory	0	0	56	4	60	2.00
51	C308	Distributed Computing	42	0	0	48	90	3.00
52	C309	Distributed Computing Laboratory	0	0	28	2	30	1.00
53	C310	Professional and Business Communication	28	0	0	32	60	2.00
54	C311	Semester Project-III	0	0	28	2	30	1.00
55	C312	Employability Skill Development Program-II	0	0	28	2	30	1.00
56	C313	Machine Learning-III(Reinforcement Learning)	42	0	0	48	90	3.00
57	C314	Machine Learning-III Laboratory	0	0	28	2	30	1.00
58	C315	Computational Linguistic	42	0	0	48	90	3.00
59	C316	Computational Linguistic Laboratory	0	0	28	2	30	1.00
60	C317	Image Processing and Computer Vision-I	42	0	0	48	90	3.00
61	C318	Image Processing and Computer Vision-I Laboratory	0	0	28	2	30	1.00
62	C319	Big Data Engineering Laboratory	0	0	56	4	60	2.00
63	C320	Cloud Computing	42	0	0	48	90	3.00
64	C321	Cloud Computing Laboratory	0	0	28	2	30	1.00
65	C322	Project Stage-I	0	0	28	2	30	1.00

66	C401	Machine Learning-IV	42	0	0	48	90	3.00
67	C402	Machine Learning-IV Laboratory	0	0	28	2	30	1.00
68	C403	Image Processing and Computer Vision-II	42	0	0	48	90	3.00
69	C404	Image Processing and Computer Vision-II Laboratory	0	0	28	2	30	1.00
70	C405	Applied Data Science Laboratory	0	0	28	2	30	1.00
71	C406	Advanced Computational Linguistics	42	0	0	48	90	3.00
72	C407	Advanced Computational Linguistics Laboratory	0	0	28	2	30	1.00
73	C408	Research Methodology	42	0	0	48	90	3.00
74	C409	Project Stage-II	0	0	112	8	120	4.00
75	C410	Advanced Networking Technology	42	0	0	48	90	3.00
76	C411	NPTEL- Advanced Computer Network	0	0	0	0	0	0.00
77	C412	Social Network Analysis	42	0	0	48	90	3.00
78	C413	NPTEL Social Networks	0	0	0	0	0	0.00
79	C414	Internship	0	0	280	20	300	10.00
		Total	1428	56	1568	1808	4860	162.00

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	15	720.00	24.00
Basic Engineering	11	510.00	17.00
Humanities and Social Scie	6	300.00	10.00
Program Core	44	2160.00	72.00
Program Electives	11	540.00	18.00
Open Electives	2	90.00	3.00
Project(s)	5	240.00	8.00
Internships/Seminars	6	300.00	10.00
Any other (Please specify)	0	0.00	0.00
Total number of Credits			162.00

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

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

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

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

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

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

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

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

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

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

Multidisciplinary and Interdisciplinary Curriculum Design

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

Academic Bank of Credits

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

Automated Permanent Academic Account Registry

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

Outcome-Based Mapping of Activities

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

Skill Development and Industry Linkages

- Collaboration with industries for internships and training.
- Organization of interdisciplinary hackathons, innovation challenges, and entrepreneurship programs.

- Focus on employability, innovation, and societal impact.
- Introduction of value-added courses in emerging areas.

Digital and Flexible Learning Initiatives

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

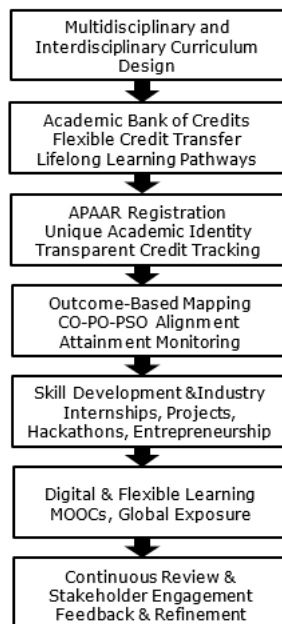


Figure 1.2.4.1: Strategies for Education Reforms

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

Table 1.2.4.1: Mapped Activities in Curriculum Design

Name of the Course/ Activity	Aligned with NEP Component	Details
Indian Knowledge System	Humanities and Social Science	In 1 st Semester
Health and Wellness-Mind and Body Management	Liberal Learning	In 1 st Semester
Mathematics for Intelligent Systems	Multidisciplinary	In 3 rd Semester
Design Thinking laboratory	Humanities and Social Science	In 3 rd Semester
Community Engagement Service	Experiential Learning	In 3 rd Semester

Computer Communication and Networks	Multidisciplinary	In 5 th Semester
Economics and Financial Management	Humanities Social Science and Management	In 4 th Semester
Semester Project-I, II, III	Skill Course	In 3 rd Semester to 5 th Semester
Project Stage-I, II and Internship	Skill Course	In 6 th , 7 th and 8 th Semester
Environmental Science	Humanities and Social Science	In 6 th Semester

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

Total Marks 20.00

1.3.1 POs and PSOs (5)

:

PSO1	Apply programming concepts, algorithms, and data structures to develop data-driven software and web solutions.
PSO2	Develop intelligent solutions using machine learning, data analysis, and cloud technologies for practical problem-solving.

1.3.2 Mapping between the Courses and POs/PSOs (15)

Institute Marks : 15.00

No. of Core Courses : 6	C2 : 2	C3 : 2	C4 : 2
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Note : Number of Outcomes for a Course is expected to be around 6.

Course Code :	C206	Semester :	3
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Course Outcome	Statements
C206.1	Design an optimized database.
C206.2	Create and populate a relational database and retrieve information from the database by formulating SQL queries.
C206.3	Explain the concepts of transaction, concurrency and recovery.
C206.4	Apply indexing mechanisms for efficient retrieval of information from database.

Course Code :	C218	Semester :	4
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Course Outcome	Statements
C218.1	Analyze the performance of algorithms using asymptotic analysis.
C218.2	Solve the problem using appropriate algorithmic design techniques.
C218.3	Justify the classification of certain problems as NP-Complete.

Course Code :	C301	Semester :	5
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Course Outcome	Statements
C301.1	Analyze different neural network architectures and their learning algorithms.
C301.2	Evaluate deep network training and design concepts.
C301.3	Build solution using appropriate neural network models.
C301.4	Describe performance of deep learning models using Explainable AI.

Course Code :	C315	Semester :	6
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Course Outcome	Statements
C315.1	Describe the pre-processing techniques required for linguistic data types.
C315.2	Apply appropriate pre-processing technique on linguistic data.
C315.3	Discuss the pre-processing techniques for linguistic data to real world problems.
C315.4	Develop applications based on natural language processing.

Course Code :	C403	Semester :	7
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Course Outcome	Statements
C403.1	Describe various data capturing methods.
C403.2	Apply appropriate object detection and object segmentation methods.
C403.3	Apply suitable method to analyze complex vision data.
C403.4	Develop suitable vision model for prediction.

Course Code :	C412	Semester :	8
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Course Outcome	Statements
C412.1	Analyze a social network using various visualization tools.
C412.2	Illustrate large-scale network data and mechanisms used for network growth models.
C412.3	Evaluate social networks analysis and prediction using case studies.
C412.4	Apply appropriate anomaly detection and graph representation method on a network.

1.4.2 Course Articulation Matrix (15)

:

1 . course name : C2C206

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C2C206.1	Design an c	2 ▾	2 ▾	2 ▾	1 ▾	1 ▾	- ▾	- ▾	- ▾	- ▾	- ▾	- ▾
C2C206.2	Create and	2 ▾	2 ▾	3 ▾	1 ▾	1 ▾	- ▾	- ▾	- ▾	- ▾	- ▾	1 ▾
C2C206.3	Explain the	2 ▾	1 ▾	1 ▾	1 ▾	1 ▾	- ▾	- ▾	- ▾	- ▾	- ▾	- ▾
C2C206.4	Apply index	2 ▾	2 ▾	1 ▾	1 ▾	1 ▾	- ▾	- ▾	- ▾	- ▾	- ▾	- ▾
Average		2.00	1.75	1.75	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

2 . course name : C2C218

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C2C218.1	Analyze the	3 ▾	1 ▾	- ▾	1 ▾	- ▾	- ▾	- ▾	- ▾	- ▾	- ▾	- ▾
C2C218.2	Solve the p	3 ▾	3 ▾	1 ▾	2 ▾	- ▾	- ▾	- ▾	- ▾	- ▾	- ▾	- ▾
C2C218.3	Justify the c	1 ▾	1 ▾	- ▾	1 ▾	- ▾	- ▾	- ▾	- ▾	- ▾	- ▾	1 ▾
Average		2.33	1.67	1.00	1.33	0.00	0.00	0.00	0.00	0.00	0.00	1.00

3 . course name : C3C301

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C3C301.1	Analyze diff	3 ▾	3 ▾	3 ▾	2 ▾	3 ▾	- ▾	- ▾	- ▾	- ▾	1 ▾	- ▾
C3C301.2	Evaluate de	- ▾	1 ▾	2 ▾	3 ▾	1 ▾	- ▾	- ▾	- ▾	- ▾	1 ▾	1 ▾
C3C301.3	Build soluti	- ▾	1 ▾	3 ▾	3 ▾	1 ▾	- ▾	- ▾	- ▾	- ▾	1 ▾	- ▾
C3C301.4	Describe pe	- ▾	- ▾	1 ▾	3 ▾	1 ▾	- ▾	- ▾	- ▾	- ▾	1 ▾	- ▾
Average		3.00	1.67	2.25	2.75	1.50	0.00	0.00	0.00	0.00	1.00	1.00

4 . course name : C3C315

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C3C315.1	Describe th	2 ▾	1 ▾	1 ▾	1 ▾	1 ▾	- ▾	- ▾	- ▾	1 ▾	- ▾	1 ▾
C3C315.2	Apply appr	1 ▾	1 ▾	1 ▾	1 ▾	1 ▾	- ▾	- ▾	1 ▾	1 ▾	- ▾	1 ▾
C3C315.3	Discuss the	1 ▾	1 ▾	- ▾	1 ▾	1 ▾	- ▾	2 ▾	- ▾	1 ▾	- ▾	1 ▾
C3C315.4	Develop ap	- ▾	1 ▾	1 ▾	1 ▾	1 ▾	2 ▾	1 ▾	1 ▾	1 ▾	- ▾	1 ▾
Average		1.33	1.00	1.00	1.00	1.00	2.00	1.50	1.00	1.00	0.00	1.00

1 . Course Name : C2C206

Course	PSO1	PSO2
C2C206.1	1 ▾	- ▾
C2C206.2	2 ▾	- ▾
C2C206.3	1 ▾	- ▾
C2C206.4	1 ▾	- ▾
Average	1.25	0.00

2 . Course Name : C2C218

Course	PSO1	PSO2
C2C218.1	1 ▾	- ▾
C2C218.2	2 ▾	2 ▾
C2C218.3	- ▾	- ▾
Average	1.50	2.00

3 . Course Name : C3C301

Course	PSO1	PSO2
C3C301.1	1 ▾	2 ▾
C3C301.2	1 ▾	2 ▾
C3C301.3	2 ▾	3 ▾
C3C301.4	1 ▾	2 ▾
Average	1.25	2.25

4 . Course Name : C3C315

Course	PSO1	PSO2
C3C315.1	1 ▾	2 ▾
C3C315.2	2 ▾	2 ▾
C3C315.3	1 ▾	2 ▾
C3C315.4	2 ▾	3 ▾
Average	1.50	2.25

5 . Course Name : C4C403

Course	PSO1	PSO2
C4C403.1	1 ▾	- ▾
C4C403.2	1 ▾	2 ▾
C4C403.3	1 ▾	3 ▾
C4C403.4	1 ▾	- ▾
Average	1.00	2.50

6 . Course Name : C4C412

Course	PSO1	PSO2
C4C412.1	2 ▾	2 ▾
C4C412.2	2 ▾	2 ▾
C4C412.3	2 ▾	2 ▾
C4C412.4	2 ▾	2 ▾
Average	2.00	2.00

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C101	3	2	PO3	2.6	1	PO6	PO7	PO8	PO9	PO10	1
C102	2.25	2	1	1	PO5	PO6	PO7	PO8	1.75	1	1
C103	2	1.25	1	1	PO5	2.25	2	PO8	1	1	1
C104	2	1	1	1	1	PO6	PO7	1	1	PO10	1
C105	2	1	1	1	1	PO6	PO7	PO8	1	PO10	1
C106	2.13	1.63	1	1	PO5	1.13	1	PO8	1.38	1	1
C107	2	1	1	1	1	PO6	PO7	1	1	PO10	1
C108	2	1	1	1	1	PO6	PO7	PO8	1	PO10	1
C109	1	1	1	1	1	PO6	PO7	1.5	1.4	PO10	1
C110	2	2.80	2	2.80	1.40	2	PO7	1	1	1	2
C111	3	2	PO3	2.6	1	PO6	PO7	PO8	PO9	PO10	1
C112	2	2	1	PO4	PO5	PO6	PO7	PO8	1.75	1	1
C113	2	1.5	1	1	PO5	2.5	2	PO8	1	1	1
C114	2	1.40	1.40	2.25	1.40	1	1	1	1.80	1	2
C115	2	1.67	1.4	2.17	1.33	PO6	2	1	1	1	1
C116	1	1	1	1	PO5	PO6	PO7	1	1	PO10	1
C117	2	1.75	1	0.50	PO5	1.25	1	PO8	1.38	1	1
C118	2	1.40	1.40	2.25	1.40	1	1	1	1.80	1	2
C119	2	1.67	1.4	2.17	1.33	PO6	2	1	1	1	1
C120	1	1	1	1	PO5	PO6	PO7	1	1	PO10	1
C201	2	1	1	1	1	PO6	PO7	PO8	PO9	PO10	PO11
C202	2	1	1	1	1.6	PO6	PO7	1	1	PO10	1
C203	2	1	1	1	1.6	PO6	PO7	1	1	PO10	1
C204	2	1.6	1.6	2	2.6	PO6	PO7	1	2.4	1	1
C205	2	1.6	1.6	2	2.6	PO6	PO7	1	2.4	1	1
C206	2	1.75	1.75	1	1	PO6	PO7	PO8	PO9	PO10	1
C207	2	1.75	1.75	1	1	PO6	PO7	PO8	PO9	PO10	1
C208	3	1.8	1	2	1	PO6	PO7	PO8	1	PO10	PO11
C209	3	1.8	1	2	1	PO6	PO7	PO8	1	PO10	PO11
C210	2.4	2.4	1.8	2.6	2.2	3	3	3	2	1.6	1.8
C211	3	2	2	2	3	1.75	3	3	1.67	3	3
C212	2	1.33	3	2	2	PO6	PO7	PO8	PO9	PO10	3

C213	2	1.33	3	2	2	PO6	PO7	PO8	PO9	PO10	3
C214	2	1.67	1.5	2	3	PO6	PO7	PO8	1	1	PO11
C215	2	1.67	1.5	2	3	PO6	PO7	PO8	1	1	PO11
C216	1.75	1	PO3	1	1	PO6	PO7	PO8	PO9	PO10	1
C217	1.75	1	PO3	1	1	PO6	PO7	PO8	PO9	PO10	1
C218	2.33	1.67	1	1.33	PO5	PO6	PO7	PO8	PO9	PO10	1
C219	2.33	1.67	1	1.33	PO5	PO6	PO7	PO8	PO9	PO10	1
C220	1	1	1	1	PO5	2.06	2.4	1.5	1	1	1
C221	2	1	1.5	1	1	1.5	2	1.33	1	PO10	1
C222	3	2	2	2	3	1.75	3	3	1.67	3	3
C223	1.67	1.17	1.4	2	2.33	PO6	PO7	1	1	1	2.5
C301	3	1.67	2.25	2.75	1.5	PO6	PO7	PO8	PO9	1	1
C302	3	1.67	2.25	2.75	1.5	PO6	PO7	PO8	PO9	1	1
C303	2.25	2.25	2	1.5	1.5	PO6	PO7	1	PO9	PO10	1.25
C304	2.25	2.25	2	1.5	1.5	PO6	PO7	1	PO9	PO10	1.25
C305	2	1	1	1	1	2	2	PO8	PO9	PO10	1
C306	2	1	1	1	1	2	2	PO8	PO9	PO10	1
C307	2	2	1	1	1	PO6	PO7	PO8	PO9	PO10	1
C308	2.33	3	2.67	3	1	1.5	PO7	2	1	1	2
C309	2.33	3	2.67	3	1	1.5	PO7	2	1	1	2
C310	PO1	PO2	1	PO4	2	2.5	3	2.50	3	1	1
C311	3	2	2	2	3	1.75	3	3	1.67	3	3
C312	1	2.33	2.33	3	3	2.25	3	2.33	2.25	PO10	3
C313	2	1.67	1.67	1.67	1	PO6	PO7	1	1	1	1
C314	2	1.67	1.67	1.67	1	PO6	PO7	1	1	1	1
C315	1.33	1	1	1	1	2	1.5	1	1	PO10	1
C316	1.33	1	1	1	1	2	1.5	1	1	PO10	1
C317	2	2	2.33	1.67	1	PO6	PO7	PO8	PO9	PO10	1
C318	2	2	2.33	1.67	1	PO6	PO7	PO8	PO9	PO10	1
C319	2	1.83	1.33	1.67	1.83	1	PO7	1	1	PO10	1
C320	2	1.75	2.25	3	2.5	1	1	1	1	1	1
C321	2	1.75	2.25	3	2.5	1	1	1	1	1	1
C322	2	1.67	1.4	1.5	1.5	2.13	2.33	2	2.25	2	1.67

C401	2	1.67	1.67	1.67	1	PO6	PO7	1	1	1	1
C402	2	1.67	1.67	1.67	1	PO6	PO7	1	1	1	1
C403	2.5	2.50	2.50	2.50	1	PO6	PO7	PO8	PO9	PO10	1
C404	2.5	2.50	2.50	2.50	1	PO6	PO7	PO8	PO9	PO10	1
C405	3	1.5	1.5	2	2.5	PO6	PO7	PO8	PO9	PO10	PO11
C406	1.5	1	1	1	1	2	1.5	1	1	PO10	1
C407	1.5	1	1	1	1	2	1.5	1	1	PO10	1
C408	2	1.25	1	1.25	1	PO6	3	1	1	PO10	1
C409	2	1.67	1.4	1.5	1.5	2.13	2.33	2	2.25	2	1.67
C410	2	1.33	1	PO4	1	2	2	PO8	PO9	PO10	PO11
C411	2	1.33	1	PO4	1	2	2	PO8	PO9	PO10	PO11
C412	2	1.75	1	1.75	1	PO6	PO7	PO8	PO9	PO10	1
C413	2	1.75	1	1.75	1	PO6	PO7	PO8	PO9	PO10	1
C414	3	2	1.67	1.5	2.33	3	3	2.6	2.6	2.33	1.5

Course Code	PSO1	PSO2
C101	PSO1	PSO2
C102	PSO1	PSO2
C103	PSO1	PSO2
C104	PSO1	PSO2
C105	PSO1	PSO2
C106	PSO1	PSO2
C107	PSO1	PSO2
C108	PSO1	PSO2
C109	1	2
C110	1	PSO2
C111	PSO1	PSO2
C112	PSO1	PSO2
C113	PSO1	PSO2
C114	1.40	PSO2
C115	2.33	PSO2
C116	1	1
C117	PSO1	PSO2
C118	1.40	PSO2

C119	2.33	PSO2
C120	1	1
C201	1.4	2.5
C202	3	PSO2
C203	3	PSO2
C204	1.8	2.4
C205	1.8	2.4
C206	1.25	PSO2
C207	1.25	PSO2
C208	1	PSO2
C209	1	PSO2
C210	2.8	2.8
C211	2	2.5
C212	1.67	PSO2
C213	1.67	PSO2
C214	3	2.5
C215	3	2.5
C216	1	PSO2
C217	1	PSO2
C218	1.5	2
C219	1.5	2
C220	1	2
C221	1.33	2
C222	2	2.5
C223	1.17	2
C301	1.25	2.25
C302	1.25	2.25
C303	2	2
C304	2	2
C305	1	PSO2
C306	1	PSO2
C307	2	PSO2
C308	1.67	2

C309	1.67	2
C310	PSO1	PSO2
C311	2	2.5
C312	2.5	3
C313	2.33	2.67
C314	2.33	2.67
C315	1.5	2.25
C316	1.5	2.25
C317	1	2
C318	1	2
C319	1.5	2.17
C320	1.5	2.67
C321	1.5	2.67
C322	2	2.25
C401	2.33	2.67
C402	2.33	2.67
C403	1	2.5
C404	1	2.5
C405	1.5	2
C406	1.67	2.33
C407	1.67	2.33
C408	1	2
C409	2	2.25
C410	1	3
C411	1	3
C412	2	2
C413	2	2
C414	2	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

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 instruction. 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.

A. Curriculum Design and Revision

The Computer Science & Engineering (Data Science) CSE (DS) curriculum is systematically framed and periodically revised by the 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 Data Analytics, Artificial Intelligence (AI), Machine Learning, Cloud Computing and Natural Language Processing 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.

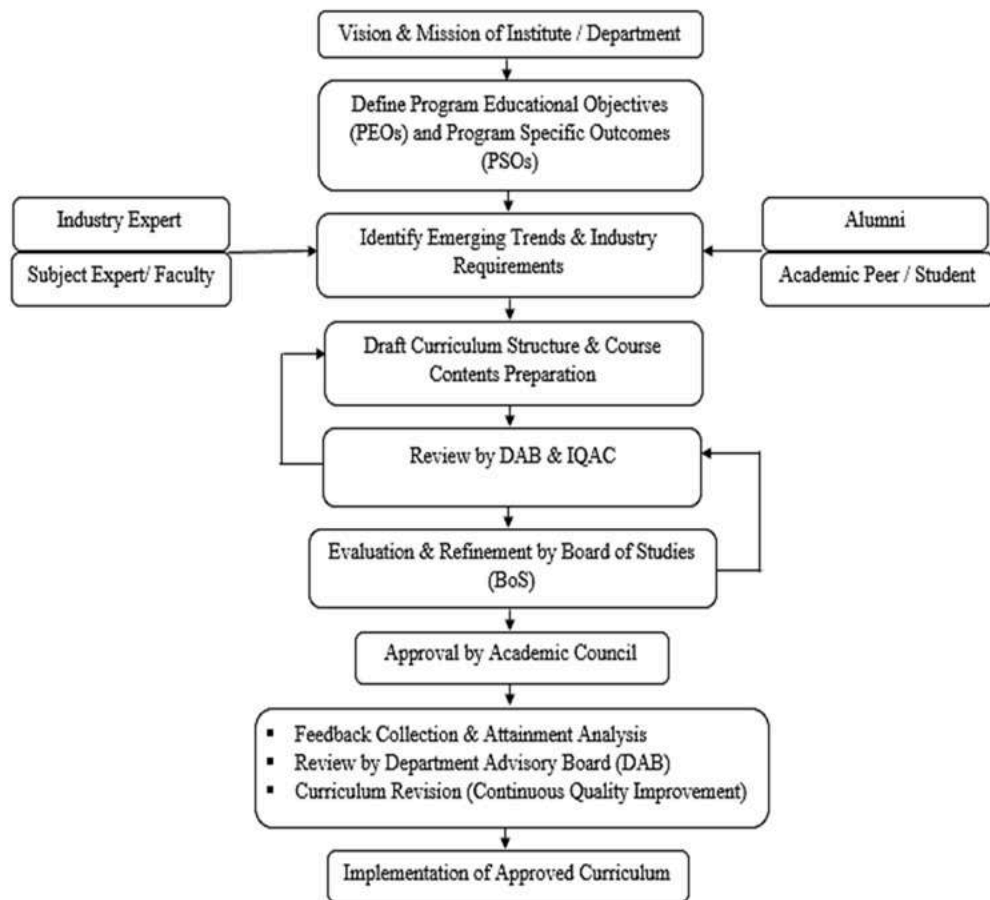


Figure 2.1.1: Process Flowchart for Curriculum Design and Revision

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

- Structured core courses cover essential and advanced CSE (DS) domains, ensuring strong theoretical and technical foundations.
- Integrated laboratories and mini projects (semester projects) strengthen practical skills, design ability, and hands-on competency.
- Electives & Emerging Technologies: A range of electives in, Advanced Computational Linguistic, Distributed Computing, Cloud Computing, Parallel Computing, Advanced Networking Technology, Social Network Analysis support specialization and flexibility.
- Internship & Capstone Project: Industry internship and final-year projects build problem-solving skills, teamwork, innovation, and professional readiness.
- Contemporary & Societal Aspects: Curriculum includes sustainability, safety, ethics, and professional practices to promote responsible and socially aware engineering graduates.

Periodic Review and Continuous Improvement: The CSE (DS) 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 Computer Science and Engineering.
- Assessment of industrial developments and evolving professional skill requirements.
- Collection and analysis of feedback from industry experts, alumni, faculty and students (if required).
- Evaluation of academic audit outcomes and COs-POs/PSOs attainment analysis.
- Implementation of recommendations from the BoS, IQAC, and Academic Council.

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

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

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

B. Outcome-Based Education (OBE)

The Department of CSE (DS) 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 Course Outcomes (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 CA, End-Semester Examinations (ESE), laboratory evaluations, mini-projects, seminars and capstone projects.

Indirect assessment is carried out through course exit surveys, and Program exit surveys. Attainment levels are calculated using predefined targets, and the results are analyzed to identify gaps.

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

Tools and Documentation

The 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.

C. Teaching Learning Process

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

C.1. Planning Phase:

The process begins with the preparation of the Institute Academic Calendar and the Autonomy Syllabus.

Course Choice and Load Distribution:

- Faculty members submit a course choice form prior to the commencement of the semester to ensure that course distribution is aligned with their areas of expertise.
- Based on these inputs, the teaching load distribution is finalized to ensure balanced workload, effective course delivery, and improved attainment of COs.

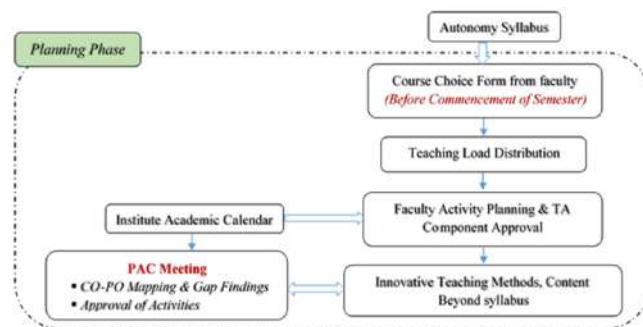


Figure 2.1.2: Planning Phase in Teaching Learning Process

Faculty Activity Planning and Approval:

- Faculty members prepare detailed lecture wise teaching activity plans.
- Teacher’s Assessment (TA) components are decided to ensure effective course delivery and evaluation.
- Course content based Individual Presentation, Group Discussion, Mock Interviews, Subject Specific Innovative activities 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 & additional content beyond the syllabus is integrated to boost student learning and prepare them for industry demands.

PAC (Program Assessment Committee) 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.

Theory Component:

- PAC meetings with course and module coordinator are conducted for Term Test question paper quality approval.
- Question papers for the Term Test are designed according to Bloom’s Taxonomy levels.
- Term Tests (TT-1 & TT-2) and teacher’s assessment components are conducted through continuous evaluation to effectively monitor and enhance student learning outcomes.

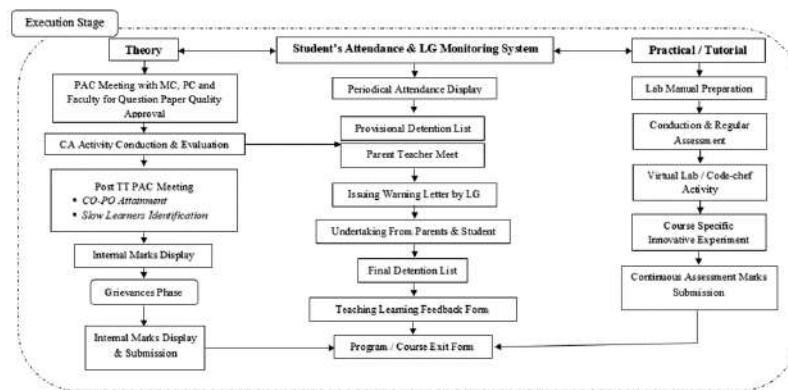


Figure 2.1.3: Execution Phase in Teaching Learning Process

- After Term Test, 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 all students through value added courses for basic knowledge and skill enhancement.
- The program supports advanced learners through add on courses, projects, and certifications, and assists slow learners through remedial classes, mentoring, and continuous feedback.
- 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 LG (Local Guardian) Monitoring System: Student attendance is monitored and displayed periodically, with provisional detention lists prepared for non-compliant students. Parent teacher meetings and warning letters are employed to ensure timely corrective actions for students with low attendance. Students, along with their parents 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 & Practical): Students undergo the ESE as a comprehensive measure to evaluate and demonstrate the attainment of COs and POs.

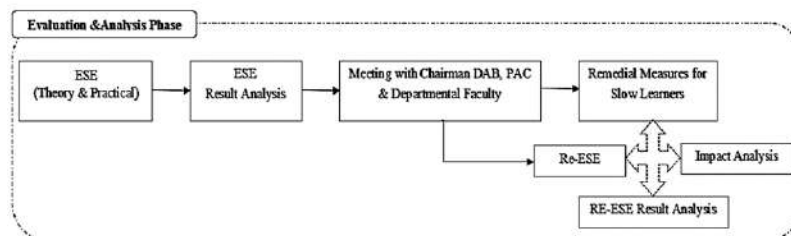


Figure 2.1.4: Evaluation and Analysis Phase in Teaching–Learning Process

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

Review Meetings for Slow Learners: 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 previous teaching learning experience, CSE (DS) Department has adopted the following pedagogical approaches as shown in Figure 2.1.5. Department adopts a structured Outcome Based Education approach where teaching learning activities are aligned with COs and POs. Academic planning, delivery, and assessments are designed to ensure students progressively achieve the expected competencies. Continuous review and improvement mechanisms are followed to maintain effectiveness.

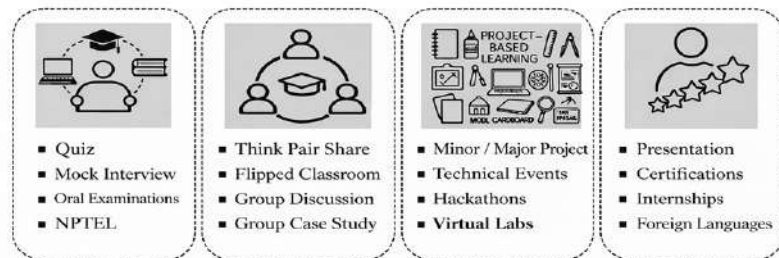


Figure 2.1.5: Pedagogical Approaches in the Teaching Learning Process

Collaborative Learning Practices: Collaborative learning is encouraged through group-centric academic tasks that promote peer interaction, shared problem-solving and active participation. These practices help 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 CSE(DS).

Competency and Skill Development: The teaching-learning process emphasizes the development of essential competencies required for engineering practice. Students are encouraged to build technical proficiency, professional behavior, and problem-solving abilities through structured academic activities that complement classroom learning.

E. Faculty Development and Training

Faculty Development and Training programs have strengthened the department's capability to deliver high-quality education aligned with current trends in Computer Science and Engineering (Data Science). Through FDPs, workshops, industry trainings, and certification courses, faculty members have enhanced their proficiency in advanced domains such as Machine Learning, Deep Learning, Emerging trends in Artificial Intelligence and Machine Learning, Generative AI, Cloud Computing, Recent trends in Computer Science and Engineering, Research Paper Writing and Publishing and modern pedagogical practices. The following Table 2.1.1 lists the sample names of FDPs, workshops, and trainings in which the faculty members participated. This improved expertise helps teachers deliver the curriculum more effectively, provide better laboratory experiences, and use new and innovative teaching methods. As a result, students gain stronger conceptual understanding, improved practical exposure, and stronger attainment of course and program outcomes.

Faculty members actively participated in various FDP's, workshops, industry training, and certification programs covering emerging and core areas of CSE (DS).

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

Sr · No	AY	Program Name / Topic	No. of Facul ty	Conducted By	Durati on	Outcome / Impact
1	202 4-25	Next-Gen AI: Innovations in Machine Learning, Deep Learning, and Generative Models	5	Marathwada Mitra Mandal's Institute of Technology, Lohagaon, Pune	1 Week	Strengthened proficiency in advanced AI models for research problem solving.
2	202 4-25	Research and Innovation Trends in Large Language Models	5	ATAL and SVKM Dwarkadas j Sanghvi College of Engineering, Mumbai	1 Week	Strengthened proficiency in LLM models for research problem solving.
3	202 4-25	Generative AI and Cloud Synergy: Empowering Faculty for Future-Ready Education	3	The School of Computing, MIT-ADT University, Pune	2 Weeks	Improved expertise in generative AI and Cloud
4	202 4-25	AI for Sustainable Development	3	VIIT Pune	1 Week	Developed interdisciplinary skills in applying AI for sustainable technologies.
5	202 4-25	AIML Geodata Analysis	3	IIRS ISRO	1 Week	Enhanced knowledge regarding AIML Geodata Analysis
6	202 4-25	Applied AI: Practical Implementations	2	TechSaksham	1 Week	Enhanced practical implementation of AI

Sr · No	AY	Program Name / Topic	No. of Facul ty	Conducted By	Durati on	Outcome / Impact
7	202 4-25	Empowering Innovations through Comprehensi ve Approaches to Research & Development	2	A.G. Patil Institute Solapur	1 Week	Enhanced research and innovation capabilities.
8	202 4-25	Generative AI: Transforming Innovation in Technology and Education	2	NMIMS Indore	1 Week	Developed competency in generative AI tools for teaching.
9	202 4-25	High Performance Computing & AI	1	Techno Engineering College Kolkata	1 Week	Improved expertise in high- performance computing for solving large-scale engineering and research problems
10	202 4-25	Emerging Trends in Data Engineering	1	SVKM's Dwarkadas J. Sanghvi College of Engineering, Mumbai, Maharashtra.	1 Week	Improved expertise in Data Engineering
11	202 4-25	Outcome Based Education and Application of Generative AI in Teaching and Research,	1	St. Mary's College (Autonomous) , Thrissur, Kerala	1 Week	Strengthene d understandin g of outcome- based education
12	202 4-25	Machine Learning	1	AICTE, SWAYAM, SkillDzire	1 Week	Strengthene d understandin g of Machine Learning

Sr · No	AY	Program Name / Topic	No. of Facul ty	Conducted By	Durati on	Outcome / Impact
13	202 4-25	DevOps	1	SimpliLearn- SkillUp	1 Month	Improved the skills of DevOps
14	202 4-25	Selenium	1	SimpliLearn- SkillUp	1 Month	Practical implementati on of Selenium
15	202 4-25	Database Expert Solutions	1	Wipro Talent NeXT	15 Days	Strengthene d database management skills.
16	202 4-25	Distributed Systems	1	NPTEL	8 Weeks	Enhanced knowledge of distributed Systems
17	202 4-25	Cloud Computing	1	NPTEL	12 Weeks	Strengthene d understandin g of cloud computing
18	202 3-24	Enhancing Research impact: Grant writing, IPR and publication strategies	4	NMIMS Indore	1 Week	Enhanced capability in grant writing and IPR.
19	202 3-24	Outcome Based Education	3	SNJB's K.B.J CoE Chandwad	1 Week	Strengthene d understandin g of outcome- based education
20	202 3-24	AWS Cloud Infrastructur e	2	MGM's College of Engineering and Technology, Navi Mumbai, Maharashtra	1 Week	Enhanced knowledge of cloud computing and services of AWS Cloud

Sr · No	AY	Program Name / Topic	No. of Facul ty	Conducted By	Durati on	Outcome / Impact
21	202 3-24	Data Science for Business	4	VIIT, Pune	1 Week	Awareness of Data Science for Business
22	202 3-24	Introduction to ML, NLP & Chat Bots	3	VPM's MPCOE, Velneswar	1 Week	Strengthene d understandin g of ML, NLP & Chat Bots
23	202 3-24	Emerging Frontiers: Data Analytics, Generative AI & ML	1	NMIMS Shirpur	1 Week	Strengthene d understandin g of Data Analytics, Generative AI & ML
24	202 3-24	NBA Process	1	NITTTR Chennai	3 Days	Strengthene d understandin g of NBA accreditation processes.
25	202 3-24	Masterclass on Machine Learning	1	IETE Pantech E Learning	1 Month	Enhanced skill of practical implementati on of ML Models
26	202 3-24	AWS Academy Graduate - AWS Academy Cloud Foundations	1	AWS Academy	1 Week	Enhanced knowledge of cloud computing and services of AWS Cloud
27	202 3-24	Microsoft Cybersuraks ha For Faculty	1	Tata Strive and Microsoft	1 Year	Strengthene d understandin g of Cyber Security

Sr · No	AY	Program Name / Topic	No. of Facul ty	Conducted By	Durati on	Outcome / Impact
28	2023-24	Quality Assurance in Higher Educational Institutes by using Open Educational Resources	1	IQAC, Theem College of Engineering, B oisar	1 Week	Upgraded Higher Educational Institutes by using Open Educational Resources
29	2023-24	Java Full Stack	1	Wipro Talent NeXT	15 Days	Strengthened Java-based full-stack development skills.
30	2023-24	.NET Full Stack	1	Wipro Talent NeXT	15 Days	Enhanced practical skills in .NET full-stack development .
31	2022-23	Emerging Technologies in Machine Learning	4	DJSCE, Mumbai	1 Week	Strengthened understanding of emerging ML technologies .
32	2022-23	Research Paper Writing and Publishing	3	Nutan College of Engineering and Research, Talegaon Dhabhade, Pune.	1 Week	Improved technical writing and publication skills.
33	2022-23	Recent trends in Computer Science and Engineering	3	Fabtech Technical Campus, College of Engineering and Research, Sangola	1 Week	Upgraded awareness of current trends in computer science

Sr · No	AY	Program Name / Topic	No. of Facul ty	Conducted By	Durati on	Outcome / Impact
34	202 2-23	Innovation, Research and IPR - Journey Towards Excellence	1	BVBs SP College of Engineering, Mumbai & HSMs SSGB College of Engineering & Technology, Bhusawal.	1 Week	Improved technical writing and publication skills.
35	202 2-23	Machine Learning and Deep Learning	1	CARE College of Engineering, Chennai	1 Week	Strengthene d understandin g of Machine Learning and Deep Learning
36	202 2-23	Machine Learning for Data Science using Python	1	NIT, Warangal	2 Weeks	Enhanced practical skills of ML using python
37	202 2-23	Machine Learning	1	SIT, Lonavala	1 Week	Strengthene d understandin g of Machine Learning
38	202 2-23	Introduction to Machine Learning	1	NPTEL	12 Weeks	Strengthene d understandin g of Machine Learning

These programs, 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 Computer Science & Engineering (Data Science) 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 as shown in Figure 2.1.6.

Process for Preparation of Academic Calendar

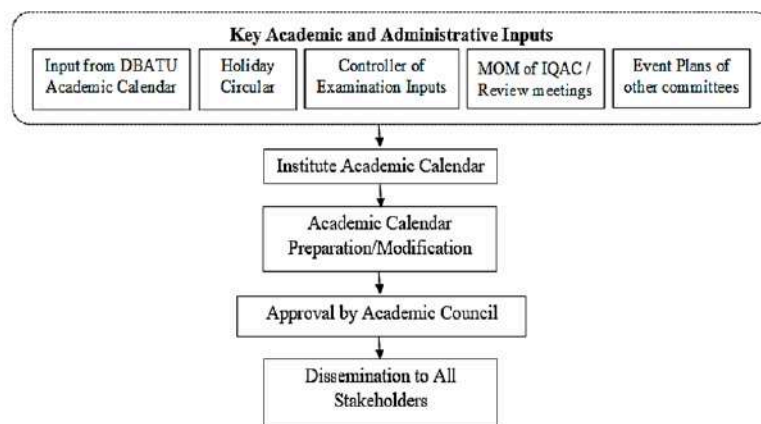


Figure 2.1.6: Academic Calendar Preparation Process Flow

- **Inputs and Data Sources:** DBATU University calendar, Holiday Circular, Controller of Examinations guidance, IQAC reviews, and departmental/event plans ensure synchronization with academic requirements.
- **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 HoDs and faculties to facilitate systematic planning of lectures, assessments and co-curricular and 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.

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.

Table No.2.1.2: Academic Calendar Compliance and Deviations (AY 2025-26, Odd Semester)

AY 2025-26				Odd Semester	
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 Semester	
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	Parent Meet	22/9/25	25/9/25	3 days later	Rescheduled to ensure higher parent participation.
6	Presentations/ Group Discussion	8-10/9/25	8-10/9/25	NA	
7	Mock Interview	25-28/10/25	6-8/11/25	11 days later	As per Expert Availability
8	Laboratory Completion	22/11/25	22/11/25	NA	
9	End of Classes	22/11/25	22/11/25	NA	
10	ESE (TH & PR) Conduction	20/12/2025	20/12/2025	NA	

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

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

H. Conduction of Laboratory Experiments

Laboratory experiments are a vital component of the undergraduate CSE (DS) 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 data analysis, machine learning, statistical modelling, database systems, and modern data science tools.

- Continuous assessment through practical performance, post lab viva-voce, assignments which ensures effective outcome attainment.
- In addition to conventional laboratories, the department incorporates Virtual Laboratories to enhance experiential learning through simulation-based experiments. It also includes AWS Academy, providing students with flexibility, opportunities for repeated practice, and exposure to advanced systems beyond the limitations of physical hardware.
- 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 course outcomes, program outcomes, and program specific outcomes.

The Department regularly collects structured feedback from key stakeholders to support continuous improvement. Employer feedback assesses graduates' technical competence and industry readiness, faculty feedback reviews curriculum adequacy and teaching-learning effectiveness, alumni feedback evaluates curriculum relevance to careers and 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 Department 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 & Assessment Plans, CA/ESE records	<ul style="list-style-type: none"> Ensures academic plan adherence, identifies gaps, corrective actions
Peer Reviews	per semester	Lecture & lab observations, project supervision, feedback on teaching- learning	<ul style="list-style-type: none"> Improves teaching-learning effectiveness, aligns with COs
IQAC-Led Monitoring	Three per Year	Academic calendar adherence, course delivery, CA/ESE oversight, project evaluation	<ul style="list-style-type: none"> Ensures teaching-learning quality, transparent assessment systematic improvement in COs-POs attainment
External Academic Audit	Once per Year	Audit by external experts on syllabus coverage, course files	<ul style="list-style-type: none"> 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 CSE(DS) 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:

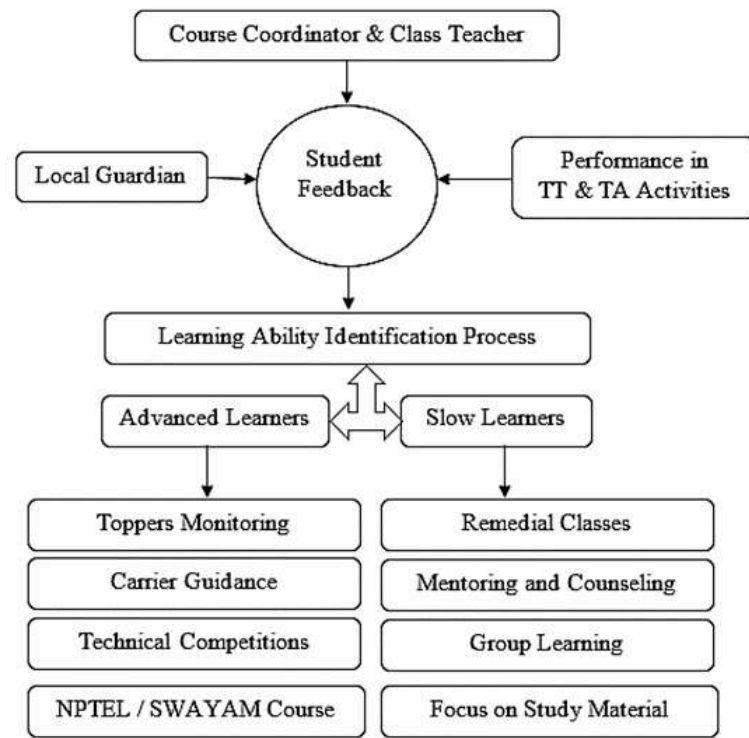


Figure 2.1.7: Learning Ability Identification and Student Support Mechanism

- 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

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

Students who require additional academic support or demonstrate advanced 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 and counselling, 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 CSE (DS) Department effectively integrates ICT and digital tools to enhance the quality of teaching-learning and to ensure better attainment of COs and POs 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
Lab Tools	VS Code, Jupiter Notebook, MongoDB, Oracle, MySQL, C/C++, AWS Academy, AWS Educate, CISCO Packet Tracer and virtual lab platforms, Data visualization tools
Online Learning Resources	NPTEL/SWAYAM videos, e-books, digital repositories
Digital Content Delivery Platforms	Google Classroom, MS Teams, Moodle for assignments, notes, announcements and communication
Project & Publication Support	Plagiarism Checking & Paraphrase Tools, modern project and publication tools including programming IDEs, data science frameworks, version control platforms

ICT-based learning enhances the teaching-learning process by improving conceptual understanding through simulations and multimedia tools, increasing student engagement, providing 24x7 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.

- Conducted on-campus training and interaction sessions by industry professionals to bridge the gap between academic learning and industry requirements.
- 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 Data Polaris, Fetch.AI, and Google Developer Groups (GDG). These platforms provide students with opportunities for interdisciplinary collaboration, leadership development, and innovation-oriented engagement beyond the classroom. Through workshops, technical sessions, expert talks, project exhibitions, outreach activities, and research-focused initiatives, students are encouraged to explore emerging technologies and address real-world engineering challenges.

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

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

O. Quality Improvement Initiatives

The CSE (DS) 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 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 CSE (DS) program.

According to the curriculum, the Capstone Project for final-year students 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
<p>Project Stage-I: [Sem-VI] Problem Identification & System Design</p>	<ul style="list-style-type: none"> • 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 Stage-II implementation plan including selected tools and an execution timeline.
<p>Project Stage-II: [Sem-VII] System Development & Evaluation</p>	<ul style="list-style-type: none"> • 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 CSE (DS) follows the below 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.

- **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, while approved topics proceed to execution.
- **Guide Allocation:** Department Head & Project Coordinator allocate faculty guides based on domain expertise, ensuring effective technical guidance, mentoring, and outcome-oriented supervision.
- **Weekly Interaction and Monitoring:** Structured weekly meetings during scheduled project hours facilitate continuous progress monitoring, technical discussion, and timely resolution of challenges.
- **Project Review and Internal Evaluation:** Periodic reviews during regular monitoring, presentations, and internal assessments are conducted to evaluate innovation, methodology, implementation quality.
- **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.

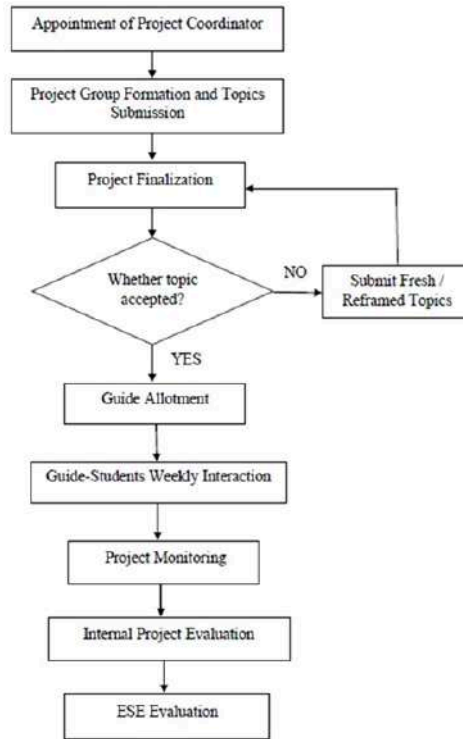


Figure 2.2.1: Process Flow for Project Topic Approval, Execution and Evaluation

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 development. Progress is assessed to ensure timely execution, quality compliance, and readiness for subsequent project phases as shown in Table 2.2.2.

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

Monitoring Stage	Activities
Monitoring – I (Project Initiation & Study)	<ul style="list-style-type: none"> • Status of log book up to Monitoring–I • Introduction and problem definition with objectives • Literature review and analysis of existing systems
Monitoring – II (System Design & Partial Implementation)	<ul style="list-style-type: none"> • Status of log book up to Monitoring–II • Planning and Designing system block diagram / architecture • Partial implementation (30–40%)

Monitoring Stage	Activities
Monitoring – III (Implementation, Testing & Documentation)	<ul style="list-style-type: none"> • Status of log book up to Monitoring–III • 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.

Table No.2.2.3: Continuous Assessment Rubrics for Project Stage-I

Student Attendance	Log book Maintenance	Literature Review	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 2.2.4.

Table No.2.2.4: ESE Assessment Rubrics for Project Stage-I

Project Topic Selection	Design/ Methodology	Implementation	Result Verification	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 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	<ul style="list-style-type: none"> • Status of log book up to Monitoring– I • Introduction and problem definition with objectives • Literature review and analysis of existing systems
Monitoring– II	<ul style="list-style-type: none"> • Status of log book up to Monitoring– II • Designing system block diagram / architecture • Implementation plan for Project Stage–II

Monitoring Stage	Activities
Monitoring-III	<ul style="list-style-type: none"> • Status of log book up to Monitoring-III • Project completion & Publication Review • Submission of complete project report

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

Table No.2.2.6: Continuous Assessment Rubrics for Project Stage-II

Student Attendance	Logbook Maintenance	Literature Review	Depth of Understanding	Report	Total
05	05	05	05	05	25

Table No.2.2.7: ESE Assessment Rubrics for Project Stage-II

Project Selection	Design Methodology	Implementation/Modelling/Simulation	Result Verification	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 shown in Table 2.2.8 & 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	Implementation of Project Stage-I	Third week of March

Sr. No.	Activity	Tentative Period
7	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
9	Internal continuous assessment 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 in prescribed format by the approval of concerned guide	First week of November
8	Internal continuous assessment 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, thereby ensuring quality outcomes and successful project completion in alignment with academics.

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 promote innovation, research aptitude, interdisciplinary learning and industry readiness. To ensure focused development and domain expertise, Capstone Projects are broadly categorized into the following domains:

- Data Science, Analytics and Machine Learning
- Artificial Intelligence & Intelligent Systems
- Web and Application Development
- IoT Services and Applications
- Cybersecurity, Blockchain, and Data Privacy
- Healthcare Services and Applications
- Automation, Tools, and Utility Systems

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.

It demonstrates balanced coverage of core and emerging CSE (DS) domains, strong attainment of POs, and effective achievement of PSO-1 and PSO-2, highlighting industry relevance and student competency development.

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
		2025-26	2024-25	2023-24		
1	Data Science, Analytics, and Machine Learning	05	04	07	PO1 to PO12	PSO1, PSO2
2	Artificial Intelligence and Intelligent Systems	07	04	05	PO1 to PO12	PSO1, PSO2
3	Web and Application Development	02	02	02	PO1 to PO12	PSO1, PSO2
4	Cyber Security, Blockchain, and Data Privacy	00	03	00	PO1 to PO12	PSO1, PSO2
5	Healthcare Services and Applications	01	02	01	PO1 to PO12	PSO1, PSO2
6	Automation, Tools, and Utility System	01	01	02	PO1 to PO12	PSO1, PSO2
Total		16	16	17		

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 SDG Mapping

Domain Name: Data Science, Analytics, and Machine Learning					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2023-24	Big Data Platform for Predicting and Preventing Financial Fraud	Safety, Ethics	Product	PO1 to PO12, PSO1, PSO2	SDG 16
2024-25	ML based UPI Fraud Detection	Safety, Ethics	Research	PO1 to PO12, PSO1, PSO2	SDG 8, SDG 16

Domain Name: Data Science, Analytics, and Machine Learning					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2025-26	Development of AI/ML based Solution to Reduce Student Dropout Rates at Various Educational Stages	Ethics, Cost	Research	PO1 to PO12, PS01, PS02	SDG 4, SDG 10

Domain Name: Artificial Intelligence and Intelligent Systems					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2023-24	Extract Stock Sentiment from News Headlines	Ethics, Cost	Application	PO1 to PO12, PS01, PS02	SDG 8
2024-25	Game Playing using Computer Vision	Ethics	Research	PO1 to PO12, PS01, PS02	SDG 9
2025-26	SAR Image Colorization for Comprehensive Insights using Deep Learning	Safety	Research	PO1 to PO12, PS01, PS02	SDG 9, SDG 13

Domain Name: Web and Application Development					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2023-24	Crop Marketplace	Environment, Cost	Application	PO1 to PO12, PS01, PS02	SDG 2

Domain Name: Web and Application Development					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2024-25	COLLAX: Online Coding Interview Platform	Ethics, Cost	Application	PO1 to PO12, PS01, PS02	SDG 4, SDG 8
2025-26	Intelligent platform to Interconnect Alumni and Student for Technical Education	Ethics, Cost	Application	PO1 to PO12, PS01, PS02	SDG 4, SDG 9

Domain Name: Cyber Security, Blockchain, and Data Privacy					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2024-25	Secure Spare: Digital Locker with Advanced Encryption Technology using Blockchain	Safety, Ethics	Product	PO1 to PO12, PS01, PS02	SDG 9, SDG 16

Domain Name: Healthcare Services and Applications					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2023-24	Parkinsons Disease Detection	Safety, Ethics	Research	PO1 to PO12, PS01, PS02	SDG 3

Domain Name: Healthcare Services and Applications					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2024-25	Tumor Detection using Machine Learning	Safety, Ethics	Research	PO1 to PO12, PS01, PS02	SDG 3
2025-26	Virtual Herbal Garden (AYUSH)	Environment, Ethics	Application	PO1 to PO12, PS01, PS02	SDG 3, SDG 15

Domain Name: Automation, Tools, and Utility Systems					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2023-24	AutoML	Cost, Ethics	Product	PO1 to PO12, PS01, PS02	SDG 9
2024-25	Saturn-AI The Proctoring System	Ethics	Product	PO1 to PO12, PS01, PS02	SDG 4, SDG 16
2025-26	Mobile App for Direct Market Access for Farmers	Cost, Ethics, Environment	Application	PO1 to PO12, PS01, PS02	SDG 1

Internship and Industrial Training provide CSE (DS) 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.

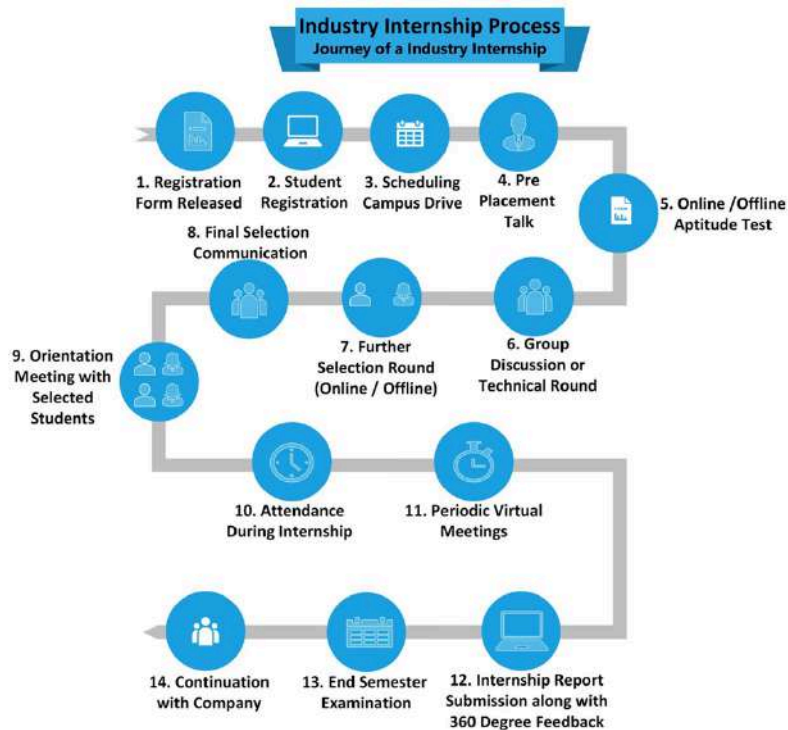


Figure 2.3.1: Flowchart of Industry Internship Process

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

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

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

Step 4: Pre-Placement Talk: The Company conducts a pre-placement talk 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 students' problem-solving skills, logical reasoning, and quantitative aptitude.

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

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

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

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

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

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

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

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

Step 14: Continuation of Students: After the ESE, students whose performance is 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 POs and PSOs:

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

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

Company Name	Students Benefitted	Duration	Skill Gained	Relevance to POs and PSOs
Quality Kiosk	11	04 Months	Software Testing (Manual & Automation Testing)	PO2, PO4, PO5, PO8, PO12, PSO1
Netwin	01	03 Months	Web application development (HTML, CSS, JavaScript)	PO1, PO2, PO3, PO5, PO12, PSO1
Numetry Technologies	01	04 Months	Software Developer (Java)	PO1, PO2, PO3, PO5, PO12, PSO1

Company Name	Students Benefitted	Duration	Skill Gained	Relevance to POs and PSOs
CasePoint	01	05 Months	Software Development (Core Java, Advanced Java)	PO1, PO2, PO3, PO5, PO9, PO12, PSO1
CapitalVIA	02	04 Months	Tech Support	PO2, PO6, PO10, PO12
Rheal Software	01	03 Months	Software Development (Core JAVA, Advanced JAVA)	PO1, PO2, PO3, PO5, PO12, PSO1
Zitics	01	03 Months	Software Development (Core & Advanced Java)	PO1, PO2, PO3, PO5, PO12, PSO1
eSamyak	01	03 Months	Software Development (Core & Advanced Java)	PO1, PO2, PO3, PO5, PO12, PSO1
Codex Technologies	01	06 Months	Web application development (HTML, CSS, JavaScript)	PO1, PO2, PO5, PSO1
Dataserve	01	03 Months	Training in Data Analysis using various tools	PO1, PO2, PO5, PSO1, PSO2

Company Name	Students Benefitted	Duration	Skill Gained	Relevance to POs and PSOs
Initfusion	01	03 Months	Web application development (HTML, CSS, JavaScript)	PO1, PO2, PO3, PO5, PO12, PSO2
NVIDIA	01	06 Months	Software platforms	PO1, PO2, PO5, PO10, PO12, PSO1, PSO2
WebLedger	01	06 Months	Cloud management	PO1, PO2, PO5, PO10, PSO2
BuildINT	02	04 Months	Software Testing (Manual & Automation Testing)	PO2, PO4, PO5, PO8, PO12, PSO1
ApMoSys	02	03 Months	Software Testing (Automation Testing) Web Development	PO2, PO4, PO5, PO8, PO12, PSO1
VinSys IT	11	03 Months	Cloud App Developer	PO1, PO2, PO5, PO6, PO8, PO12, PSO1, PSO2
HiDevs	01	03 Months	Enhanced skills use of AI tools	PO1, PO2, PO5, PO10, PSO2

Company Name	Students Benefitted	Duration	Skill Gained	Relevance to POs and PSOs
Networcx_A G	01	03 Months	Cloud Services and management	PO1, PO2, PO5, PO10, PSO2
WebTech	01	06 Months	Web Development (HTML, CSS, JavaScript)	PO1, PO2, PO5, PSO1
Talento	01	06 Months	Web Development (HTML, CSS, JavaScript)	PO1, PO2, PO5, PSO1
Patseer	03	06 Months	Software Development (Java)	PO1, PO2, PO3, PO5, PO12, PSO1
FSD Certification Program By Symbiosis Skill University	03	04 Months	Web Development (HTML, CSS, JavaScript)	PO1, PO2, PO3, PO5, PO12, PSO1
Mid office Application	01	06 Months	AWS skills as AWS Lambda, integrating AWS SQS to automate data processing, and loading data into Snowflake.	PO1, PO3, PO5, PO12, PSO2
TCS	01	06 Months	Skills in HTML, CSS, JavaScript, frontend frameworks, backend development, and application deployment	PO1, PO2, PO5, PSO1

Company Name	Students Benefitted	Duration	Skill Gained	Relevance to POs and PSOs
YSP Infotech	01	06 Months	Enhanced skills in Full stack web development	PO1, PO3, PO5, PO12, PSO2

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

To enhance experiential learning and practical application of theoretical concepts, Semester Projects are introduced in Semesters III, IV, and V. These projects strengthen students' technical skills, problem-solving ability, teamwork, and presentation skills, while fostering design thinking and implementation capabilities. Each project concludes with a Semester Project report submitted as part of requirements, following a 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 is implemented in the same structured manner as the capstone project.

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

B. Process for Monitoring and Evaluation

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

In addition, the department organizes three formal 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

Student Attendance	Log book Maintenance	Literature Review	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 Completion 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 Selection	Design/ Methodology	Implementation	Result Verification	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 block diagrams, and system design (PO3), as well as experimentation, testing, and debugging (PO4).

Effective use of software and modern engineering tools such as full stack web development 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). Project management, cost analysis, and resource planning (PO11) are also emphasized. Finally, the projects encourage lifelong learning and adaptation to new technologies (PO12).

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

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

Sr. No.	Project Areas	No. of Semester Project-I			Mapping with POs	Mapping with PSOs
		2025-26	2024-25	2023-24		
1	Data Science, Analytics, and Machine Learning	01	01	01	PO1 to PO12	PSO1, PSO2
2	Artificial Intelligence and Intelligent Systems	00	04	01	PO1 to PO12	PSO1, PSO2
3	Web and Application Development	26	09	12	PO1 to PO12	PSO1, PSO2
4	Healthcare Services and Applications	04	04	02	PO1 to PO12	PSO1, PSO2
5	Automation, Tools and Utility System	02	02	02	PO1 to PO12	PSO1, PSO2
Total		33	20	18		

Table No.2.4.4: Domain wise Categorization of Semester Project-II and POs-PSOs Mapping

Sr. No.	Project Areas	No. of Semester Project-II			Mapping with POs	Mapping with PSOs
		2024-25	2023-24	2022-23		
1	Data Science, Analytics, and Machine Learning	04	07	04	PO1 to PO12	PSO1, PSO2
2	Artificial Intelligence and Intelligent Systems	01	02	06	PO1 to PO12	PSO1, PSO2
3	Web and Application Development	08	03	05	PO1 to PO12	PSO1, PSO2
4	IoT Services and Applications	01	00	00	PO1 to PO12	PSO1, PSO2
5	Cyber Security, Blockchain, and Data Privacy	01	00	00	PO1 to PO12	PSO1, PSO2
6	Healthcare services and Applications	01	03	01	PO1 to PO12	PSO1, PSO2
7	Automation, Tools and Utility System	02	02	00	PO1 to PO12	PSO1, PSO2
Total		18	17	16		

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

Sr. No.	Project Areas	No. of Semester Project-III			Mapping with POs	Mapping with PSOs
		2025-26	2024-25	2023-24		
1	Data Science, Analytics, and Machine Learning	08	06	06	PO1 to PO12	PSO1, PSO2
2	Artificial Intelligence and Intelligent Systems	05	05	04	PO1 to PO12	PSO1, PSO2
3	Web and Application Development	01	03	02	PO1 to PO12	PSO1, PSO2
4	IoT Services and applications	02	01	00	PO1 to PO12	PSO1, PSO2
5	Cyber Security, Blockchain, and Data Privacy	00	00	01	PO1 to PO12	PSO1, PSO2
6	Healthcare Services and applications	02	01	02	PO1 to PO12	PSO1, PSO2
7	Automation, Tools and Utility System	00	01	01	PO1 to PO12	PSO1, PSO2
Total		18	17	16		

Through these experiences, students strengthen PSO1, reinforcing Computer Science & Engineering (Data Science) fundamentals, and PSO2, enhancing competencies in machine learning and data analysis. Overall, semester projects ensure comprehensive POs-PSOs attainment, practical competence, and readiness for higher-level projects or professional challenges.

The projects are designed in alignment with relevant Sustainable Development Goals (SDGs) to promote socially responsible engineering across various domains. They provide students with practical exposure to real world problem solving using modern engineering tools and technologies. Through these experiences, students apply core engineering knowledge, analytical abilities, and design principles, thereby achieving the intended POs and PSOs. The following Table 2.4.6 shows the sample semester projects Domain wise POs, PSOs and SDG Mapping.

Table No.2.4.6: Sample Semester projects Domain wise POs, PSOs and SDG Mapping

Domain Name: Data Science, Analytics, and Machine Learning					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2023-24	House Price Prediction using Machine Learning	Ethics, Cost	Research/ Application	PO1 to PO12, PSO1, PSO2	SDG 11
2024-25	Climate-Smart Crop yield forecasting using Machine Learning	Environment	Research/ Application	PO1 to PO12, PSO1, PSO2	SDG 2, SDG 13

Domain Name: Data Science, Analytics, and Machine Learning					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2025-26	Rice Leaf Disease Detection using Deep Learning	Environment	Research/Application	PO1 to PO12, PSO1, PSO2	SDG 2

Domain Name: Artificial Intelligence and Intelligent Systems					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2023-24	Object Detection	Safety, Ethics	Application	PO1 to PO12, PSO1, PSO2	SDG 9
2024-25	Grocery Shopping through recommendation System	Cost, Ethics	Application	PO1 to PO12, PSO1, PSO2	SDG 12
2025-26	AI Powered Speech Feedback Web Application	Cost	Application	PO1 to PO12, PSO1, PSO2	SDG 4

Domain Name: Web and Application Development					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2023-24	Cargo Management System	Cost, Environment	Application	PO1 to PO12, PSO1, PSO2	SDG 9
2024-25	Placement Portal Using Java	Ethics, Cost	Application	PO1 to PO12, PSO1, PSO2	SDG 8
2025-26	Gluko-Care: A ML Based Web App for Diabetes Detection & Lifestyle Suggestions	Safety	Application	PO1 to PO12, PSO1, PSO2	SDG 3

Domain Name: IoT Services and applications					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2024-25	Fire Detection System	Safety, Environment	Product	PO1 to PO12, PSO1, PSO2	SDG 11
2025-26	An AI powered YOLO Based Adaptive Traffic Control System for Urban Intersections	Environment, Cost	Application	PO1 to PO12, PSO1, PSO2	SDG 9

Domain Name: Cyber Security, Blockchain, and Data Privacy					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2023-24	Secure Messaging Applications	Ethics, Safety	Product	PO1 to PO12, PSO1, PSO2	SDG 16
2025-26	Fraud Detection in Credit Card Transactions	Safety, Ethics (data privacy)	Research	PO1 to PO12, PSO1, PSO2	SDG 16

Domain Name: Healthcare Services and applications					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2023-24	Web Platform for Disease Prediction using Machine Learning	Safety, Ethics	Research/Application	PO1 to PO12, PSO1, PSO2	SDG 3
2024-25	Protein Structure Prediction using Deep Learning	Ethics, Safety	Research	PO1 to PO12, PSO1, PSO2	SDG 3

Domain Name: Healthcare Services and applications					
Academic Year	Project Name	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
2025-26	Autism prediction using Machine Learning	Safety	Research	PO1 to PO12, PSO1, PSO2	SDG 3

At the same time, these projects enhance PSO1 by applying Computer Science fundamental and strengthen PSO2 through proficiency in software, intelligent algorithms, and cloud 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 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 CSE (DS). It is conducted for 2–3 subjects as a key component of teacher assessment, this activity aims to enhance students' technical knowledge, communication skills, confidence, and professional presentation abilities.

Students are assigned topics from subjects or interdisciplinary areas aligned with COs, POs, and PSOs, and 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 Q&A.
- Compute final marks as the average of panel scores.

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

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	PO's Mapping	PSO's Mapping
Large Action Models (LAMs): Moving Beyond Text Generation	Large Language Models	PO1, PO2, PO5, PO10, PO12	PSO2
Serving LLMs with APIs: Best Practices and Challenges	Large Language Models	PO1, PO2, PO3, PO5, PO10, PO12	PSO2
LLMs in Education: Personalized Tutoring Systems	Large Language Models	PO1, PO2, PO3, PO5, PO6, PO7, PO9, PO10	PSO1, PSO2
DBMS System Architecture	Database Management System	PO1, PO2, PO3, PO5	PSO1

Presentation Topic	Course	PO's Mapping	PSO's Mapping
Concurrency Control Protocols	Database Management System	PO1, PO2, PO4, PO5, PO6, PO7, PO12	PSO1, PS O2
Modern Cyber Attack Trends: Discuss the evolution of cyber-attacks, from simple viruses to sophisticated ransomware and state-sponsored attacks.	Information Security	PO1, PO2, PO4, PO5, PO6, PO7, PO12	PSO1, PS O2
Social Engineering: Detail the various types of social engineering attacks, like phishing and pretexting, and how to defend against them.	Information Security	PO1, PO2, PO4, PO5, PO6, PO7, PO12	PSO1, PS O2

2.5 Case Studies and Real-Life Examples (10)

Total Marks 10.00

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

Table 2.5.1 presents a comprehensive overview of Interdisciplinary projects, Deployable Projects and Universal Human Values (UHV) case studies, showcasing the systematic integration of technical education with ethical understanding and real-world applications. The Table 2.5.1 captures sample activities implemented across academic years, covering diverse domains such as Data Science, Analytics, and Machine Learning, Artificial Intelligence and Intelligent Systems and Web and Application Development. Each activity is mapped to the relevant POs and COs.

- POs & COs attainment: Strengthening engineering knowledge, problem-solving ability, ethical reasoning, teamwork, communication, and lifelong learning through both technical projects and value-based case studies.
- Industry-readiness: By applying theoretical knowledge to real-life scenarios and interacting with relevant industries or organizations.
- Sustainable Development Goals (SDGs): Many projects address SDGs such as SDG 3 (Health & Well-being), SDG 9 (Industry, Innovation & Infrastructure), SDG 11 (Sustainable Cities & Communities), SDG 12 (Responsible Consumption & Production), and SDG 13 (Climate Action).
- Hands-on learning and innovation: Students gain practical exposure to modern tools and technologies such as AI, data analytics, intelligent systems, and web platforms, along with deployable and demonstration-ready solutions.
- Ethical and human value development: UHV case studies through role plays, posters, debates, and reflections cultivate honesty, integrity, justice, compassion, environmental responsibility, and harmonious living.
- Holistic education and social impact: The combined focus on interdisciplinary technical projects and UHV case studies ensures balanced development of technical competence, ethical awareness, and social responsibility.

Sustainable Development Goals (SDGs): The projects and case studies are designed in alignment with relevant Sustainable Development Goals (SDGs) to promote socially responsible engineering across various domains.

Table No.2.5.1: Sample Real-Life and Case Studies Examples

Sr No	Topic	Course Name	PO Mapped	Description of Case / Real life Example	Industry / Organization Involved	Application Area/ Domain	Learning Outcome / Insight	Assessment Method Used	Reference / Source
1	CureConnect-Enterprise Edition	Web Engineering	PO1 to PO12, PSO 1, PSO2	Healthcare management platform designed to connect hospitals, doctors, patients.	Siddhivinayak Hospital, Shirpur	Healthcare Information Systems	Students understand enterprise web application development, system design	Project Implementation, Presentation	Research articles on healthcare web systems
2	An AI powered Adaptive Traffic Control System	Semester Project – III	PO1 to PO12, PSO 1, PSO2	The system uses AI and real-time traffic data to dynamically control signals, reducing congestion and wait times.	Traffic Police Department, Smart City Mission, Urban Transport Authorities	Artificial Intelligence / Data Science / IoT	Students learn to apply AI for real-time decision making, data analytics, sensor integration	Project demonstration, results, Viva-voce, technical report	Smart Traffic Management Systems, AI-based traffic control research papers
3	Smart Archive: Previous Year Exam Papers Management System	Semester Project-I	PO1 to PO12, PSO 1, PSO2	Web-based application that is useful to retrieve previous year question papers.	R. C. Patel Institute of Technology, Shirpur	Education	Academic Information Management System	Project demonstration, Viva-voce, technical report	Examination office Data

Sr No	Topic	Course Name	PO Mapped	Description of Case / Real life Example	Industry / Organization Involved	Application Area/ Domain	Learning Outcome / Insight	Assessment Method Used	Reference / Source
4	Exam Seating Arrangement	Semester Project-I	PO1 to PO12, PSO1, PSO2	An automated system that generates fair and optimized exam seating plans while reducing errors and effort.	R. C. Patel Institute of Technology, Shirpur	Education	Students gain hands-on experience to solve real time problem	Project demonstration, Viva-voce, technical report	Examination office Data
5	Indoor Navigation System	Project Stage-II	PO1 to PO12, PSO1, PSO2	The system offers precise indoor navigation for complex buildings where GPS is ineffective.	Smart Buildings, Hospitals, Airports, shopping malls, Educational Campuses	Indoor Positioning Systems	Students understand indoor positioning challenges, data processing, and user-centric system design for smart infrastructure applications.	Project demonstration, Case study analysis, Viva-voce, Report evaluation	Indoor Positioning System (IPS) research papers, Smart Hostel case studies
6	Student Feedback System for RCPIT	Project Stage-I and II	PO1 to PO12, PSO1, PSO2	An online system where students give anonymous feedback, which is stored and reviewed to improve teaching and courses	R. C. Patel Institute of Technology, Shirpur	Application: Online collection of student feedback on courses, and faculty Domain: Web and Application Development	Students gain skills in web application development, problem analysis	Project evaluation and demo	Institute feedback guidelines, SDLC, user requirements, and software references
7	Converges Live Leader board System	Web Engineering	PO1 to PO12, PSO1, PSO2	A website to manage event details, registrations, and updates.	R. C. Patel Institute of Technology, Shirpur	Web and Application Development	Students will build a responsive website to share event details, handle registrations, and provide updates	Evaluation based on website usability, accuracy, reliability, and user feedback.	Similar kind of websites and its working and suggestions and feedback by stakeholders

Sr No	Topic	Course Name	PO Mapped	Description of Case / Real life Example	Industry / Organization Involved	Application Area/ Domain	Learning Outcome / Insight	Assessment Method Used	Reference / Source
8	Case Study on Indoor Navigation System	Project Stage-I	PO1 to PO12, PSO1, PSO2	The system offers precise indoor navigation for complex buildings where GPS is ineffective.	Smart Buildings, Hospitals, Airports, shopping malls, Educational Campuses	Indoor Positioning Systems	Students understand indoor positioning challenges	Case study analysis	Indoor Positioning System (IPS) research papers
9	Case Study on Examination process	Semester Project-I	PO1 to PO12, PSO1, PSO2	Students visited examination section	R. C. Patel Institute of Technology, Shirpur	Examination office	Students understand challenges in manual task	Case study analysis	Examination department
10	Act on Ethics	Universal Human Values	PO1 to PO12, PSO1, PSO2	Role Play	R. C. Patel Institute of Technology, Shirpur	Professional Ethics	Importance of honesty and Human values in professional life.	Role Play	UHV Textbook, AICTE Ethics Module

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

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

Sr. No.	Name of the Module	Skill Gained	Relevance to PO's and PSO's
1	Computer Organization, Operating Systems	Basics of operating system, System fundamentals, computer organization, various services of operating system	PO1, PO2, PO3, PO4, PSO1
2	Database Concepts	Database design, SQL/NoSQL queries, data model, transaction handling	PO1, PO2, PO3, PSO1
3	Networking & Security	Network architectures, protocols, and security mechanisms for reliable and secure data communication	PO1, PO2, PO5, PO6, PSO1
4	Computer & Programming	Development of algorithmic thinking, programming skills, and software solutions using modern programming languages and tools	PO1, PO5, PO12, PSO1, PSO2
5	Artificial Intelligence & Machine Learning	Intelligent agents, reasoning, search techniques, decision-making systems, GenAI basics, Supervised & unsupervised learning, model training, evaluation, ML tools	PO1, PO2, PO3, PO5, PO6, PO11, PO12, PSO1, PSO2
6	Data Structures & Algorithms	Algorithm design, problem-solving, data structures, computational thinking	PO1, PO2, PO3, PO4, PO12, PSO1
7	Programming Foundation	Programming logic, SDLC, agile practices, application development, and version control	PO1, PO2, PO3, PO4, PO12, PSO1, PSO2
8	Distributed and Cloud Computing	Cloud Foundations and Services	PO1, PO2, PO3, PO5, PSO2
9	Data Analysis	Data preprocessing, visualization, analytics, ML pipelines, business insights	PO1, PO2, PO3, PO5, PO12, PSO1, PSO2
10	Professional Skills	Resume writing, interview preparation, teamwork, workplace readiness	PO6, PO10, PO11, PSO2
11	Project & Skill Development	Ability to apply engineering knowledge to solve real-world problems through projects, innovation, and research	PO2, PO3, PO4, PO9, PO12, PSO1, PSO2

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

Table No.2.6.2: Year wise Certification by Students

Academic Year	2022-23	2023-24	2024-25	2025-26
No. of Certifications	120	200	558	410

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 CodeChef are actively used to enhance students' 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, thesis, and conference proceedings, enabling students to engage in independent learning, literature surveys, and research-oriented activities.

AWS Academy and AWS Educate provides institutes with industry-aligned cloud computing curriculum and teaching resources at no cost.

Students gain hands-on cloud skills, real-world experience, and better career readiness through AWS recognized learning paths.

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, also promoting self-directed and lifelong learning.

2.7 Solving Complex Engineering Problems Incorporating Sustainability Goals (20)

Total Marks 20.00

Solving complex engineering problems incorporating sustainability goals strongly supports the OBE framework by effectively connecting theoretical concepts with practical implementation. Such activities enhance engineering knowledge, problem analysis, solution design, and the use of modern engineering tools, while fostering critical thinking, ethical awareness, teamwork, communication, and project management skills. Overall, they strengthen POs and PSOs attainment, improve industry readiness, and promote lifelong learning. The following Table 2.7.1 presents selected industry-driven problem scenarios, their engineering methodology, proposed solutions, societal impact, and assessment methods, demonstrating practical implementation and sustainable innovation.

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

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
SAR Image Colorization for Comprehensive Insights using Deep Learning	Project Stage-II	PO1 to PO12	SDG 9, SDG 13	SAR images are hard to interpret due to grayscale format	Deep learning-based image colorization using CNNs	Python, Tensor Flow, Keras, OpenCV	Automatic colorization of SAR images for better interpretation	Improved disaster monitoring and environmental analysis	Project report evaluation, Demonstration
PrepCET	Web Engineering	PO1 to PO12	SDG 4	PrepCET is an all-in-one app for admission guidance MHT-CET students.	Mobile App development	React Native, Node.js	Promotes equal access to transparent college data, empowering students from all backgrounds	Helps thousands of students make informed education choices and reduces confusion during the admission process.	Evaluation based on utilization
Institute Journal Website-IJFES (International Journal of Frontiers of Engg and Sciences)	Web Engineering	PO1 to PO12	SDG 4, SDG 9	Design and development of a web-based journal management system	Development of the IJFES journal website using the MERN stack	React.js, Node.js, Express.js, MongoDB	Design and development of a web-based journal management system	Promotes research culture	Evaluation based on website usability
COLLAX: Online Coding Interview Platform	Project Stage-II	PO1 to PO12	SDG 4	Design system to conduct online technical interviews	Development of Built-in collaborative Code Editor and Digital Whiteboard	Vs Code ,MongoDB	Web interview platform	Conduct interviews seamlessly	Project report evaluation, Demonstration
Exam.AI-The Proctoring System	Project Stage-II	PO1 to PO12	SDG 4, SDG 16	Online exams lack effective monitoring	AI-based face detection and behavior analysis	Python, OpenCV, Deep Learning, Webcam	Automated online exam proctoring system	Ensures fair and transparent assessments	Project report evaluation, Demonstration
Indoor Navigation System	Project Stage-II	PO1 to PO12	SDG 9, SDG 11	GPS is unreliable for indoor navigation	Sensor-based localization and pathfinding algorithms	Android, BLE, Wi-Fi, Python, Maps API	Mobile app for accurate indoor navigation	Enhances accessibility and smart infrastructure	Project report evaluation, Demonstration

2.8 Steps Taken for Enhancing Industry Institute Partnerships (15)

Total 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

Institute 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
Kruconomy Consulting Pvt. Ltd., Bangalore (Machine Hack)	<ul style="list-style-type: none"> • Delivery of AI/Data Science courses • Python for Data Computing & DS 101 	<ul style="list-style-type: none"> • Semester-long AI/DS courses • LMS-based student progress tracking
Case Point Private Ltd.	<ul style="list-style-type: none"> • Collaboration for training students in relevant technologies • Providing skill-based training, workshops, assessments • Recruitment support • Confidentiality, IP protection, termination clauses included 	<ul style="list-style-type: none"> • Technical & skill-based training for students • Periodic assessments and assignments • Recruitment/interview process for shortlisted candidates
Esamyak Software Pvt. Ltd.	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Technical & skill-based training for students • Periodic assessments and assignments • Recruitment/interview process for shortlisted candidates

Name of the Industry	MOU for	Activities Conducted
EagleByte Solutions Pvt. Ltd.	<ul style="list-style-type: none"> • Industrial training for students & 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 	<ul style="list-style-type: none"> • Expert sessions & workshops on emerging tech • Live project execution & mentoring • Summer/Winter internship programs • Technical events participation • Career guidance and placement support
CodeQuotient Pvt. Ltd.	<ul style="list-style-type: none"> • Access to CodeQuotient Platform /courses online to all the students & teacher of the partner • Online/On-Campus Training • Industrial training to selected students • Internship/Jobs to the selected students 	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> • Coding & technical skill development • Placement readiness training • webinars by industry experts • Coding tests 	<ul style="list-style-type: none"> • Webinars • Coding events • Placement Assessment Test

Name of the Industry	MOU for	Activities Conducted
Sorting Hat Technologies Pvt. Ltd. (CodeChef)	<ul style="list-style-type: none"> • Periodic practice sessions & Assessment-based tests (for grading) shall be created by CodeChef for the students • A monthly report shall be sent to the College about the students' overall performance on CodeChef 	<ul style="list-style-type: none"> • 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.
Campus Credential	<ul style="list-style-type: none"> • Aptitude & Technical Training • Pre-placement expert lectures (seminars/webinars) • Career guidance sessions • Training students for placement • Employability skills enhancement 	<ul style="list-style-type: none"> • 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
RPG Foundation	<ul style="list-style-type: none"> • Employability Skills Development under CSR initiative • Technical, soft skills & domain-based training. • Real-time case study-based training (Cloud, DevOps, Robotics, Agile, etc.) • Provide trainers, assessments & course content • RCPIT provides infrastructure, staff, and batch coordination 	<ul style="list-style-type: none"> • Employability Training (Technical + Soft Skills) • Cloud Computing, Agile, DevOps Modules • Industry Case-Based Training • Student Assessments • Continuous feedback & progress review

Name of the Industry	MOU for	Activities Conducted
Centum Foundation	<ul style="list-style-type: none"> • Orientation, screening & enrolment of students • Training in hybrid mode (300 hrs. total —online & offline) • Creating LMS, assessments, assignments, training reports • Improving employability skills of beneficiaries • Confidentiality, IP rights, compliance with law, liability, termination terms • RCPIT provides training venues, mobilization, trainer support, attendance records, and a safe environment 	<ul style="list-style-type: none"> • Students' orientation & screening • Online/offline skill development training • LMS-based assessments & progress tracking • Placement support for trained beneficiaries • Regular reporting, batch formation, trainer scheduling • Certificates issued after successful completion of Training
R3 Systems India Private Limited	<ul style="list-style-type: none"> • Classroom-based technical training • Workshops, technical sessions, industry-oriented module • Continuous assessment & feedback • Expert sessions and guidance for employability • Joint review committee activities 	<ul style="list-style-type: none"> • Classroom-based technical training • Workshops, technical sessions, industry-oriented modules • Continuous assessment & feedback • Mock Interviews/Resume Preparations for final year students

Name of the Industry	MOU for	Activities Conducted
Infosys Limited (Springboard)	<ul style="list-style-type: none"> • Access to Infosys Springboard digital learning platform • CSR-based training initiative for students & faculty • FDPs on pedagogy, instructional design & emerging technologies • Non-commercial academic use only • 5-year validity, confidentiality & data privacy agreements 	<ul style="list-style-type: none"> • Expert sessions & workshops on emerging tech • Live project execution & mentoring • Summer/Winter internship program • Technical events participation • Career guidance and placement support
MakeMyCareer_WCF	<ul style="list-style-type: none"> • Training under Make My Career Program for underprivileged graduates • Domain knowledge, soft skills, project work, case studies • WCF responsible for training delivery; RCPIT for mobilization & attendance (85%) • Branding & CSR promotion guidelines 	<ul style="list-style-type: none"> • Student identification & enrolment • Online/offline skill-based training • Project-based learning & assessments • Career readiness sessions • CSR publicity as per WCF guidelines
Effective German Academy	<ul style="list-style-type: none"> • 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 provides Webinar for awareness of German Language 	<ul style="list-style-type: none"> • 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

Name of the Industry	MOU for	Activities Conducted
Yen Academy	<ul style="list-style-type: none"> • Conduct Japanese Language Training for JLPT N5 and N4 • 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 	<ul style="list-style-type: none"> • 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
Admission Labs Germany	<ul style="list-style-type: none"> • Guiding and assisting students interested in pursuing Higher education in Germany • Documentation and application support • Assisting VISA documentation etc. 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • To promote internationalization, academic exchange • To establish strategic partnership to deliver the TNE program 	<ul style="list-style-type: none"> • 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.

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

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, PSO1
Esamyak Software Pvt. Ltd.	The MoU strengthened programming proficiency and analytical thinking.	PO1, PO2, PO5, PO12, PSO1
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, PSO1, PSO2
Sunrise Mentors Pvt. Ltd. (Coding Ninjas)	The MoU enhanced coding ability and placement preparedness.	PO2, PO5, PO11, PSO1
Sorting Hat Technologies Pvt. Ltd. (CodeChef)	The MoU improved problem-solving and competitive programming skills through regular assessments.	PO2, PO5, PO12, PSO1
Campus Credential	The MoU strengthened aptitude, technical skills, and employability.	PO1, PO5, PO10, PSO1
RPG Foundation	The MoU enhanced employability through industry-relevant technical and soft skill training.	PO6, PO8, PO10, PO12, PSO1
Centum Foundation	The MoU improved skill development, assessment-based learning, and placement support.	PO5, PO7, PO10, PSO1
R3 Systems India Pvt. Ltd.	The MoU strengthened industry-oriented technical skills and career readiness.	PO1, PO2, PO5, PO9, PSO1

Industry Name	Impact Analysis	Mapped POs / PSOs
Infosys Ltd. (Springboard)	The MoU promoted digital skills, faculty up skilling, and lifelong learning.	PO1, PO2, PO5, PO12, PSO1
MakeMyCareer - WCF	The MoU enhanced career readiness of underprivileged students through project-based learning.	PO6, PO8, PO10, PSO1
Effective German Academy	The MoU improved global employability through foreign language proficiency.	PO8, PO10, PO12, PSO1
Yen Academy	The MoU developed Japanese language skills for international career opportunities.	PO8, PO10, PO12, PSO1
Admission Labs Germany	The MoU facilitated opportunities for higher education abroad through structured guidance.	PO8, PO10, PSO1
Powerhouse Global Services	The MoU strengthened international exposure and global academic collaboration.	PO8, PO10, PSO1

B. Industrial Guest Lectures

The CSE (DS) Department organized a series of expert lectures, national-level webinars, and Ministry of Education Innovation Cell (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 2.8.3 represents Impact of Expert Lectures and Resource Person Sessions on POs-PSOs Attainment.

Table No.2.8.3: 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 (POs/PSOs)
Dr. Sushant Bahekar, Data Scientist, John Deere, Pune	Semester Project-III Topic selection and finalization	23 Aug 2025	110	Weak understanding of Project Selection	PO1, PO2, PO3, PSO1, PSO2
Dr. Smita Mahajan, Professor at Symbiosis Institute of Technology, Pune	Machine Learning	07 Aug 2025	100	Insufficient awareness of handling Data	PO1, PO2, PO5, PO10, PSO1
Dr. Pravin Kumar Loharkar, Assistant Professor, NMIMS, Shirpur	No Code, Big Impact: Unlock AIs Power	05 Mar 2025	120	Lack of awareness of AI Tools	PO3, PO9, PO12, PSO1, PSO2
Ms. Vijaya S. Ahire, Senior Technical Lead, PTC India	NLP and LLM	05 Oct 2024	100	Insufficient knowledge of LLM domain	PO1, PO3, PSO1, PSO2
Mr. Nikhil S. Mahadeshwar, CEO, Cyber Secured India, Pune	Career in Cyber Security & Digital Forensic	06 May 2023	150	Career in Cyber Security & Digital Forensic	PO8, PO12, PSO2
Mr. Aiman Ansari, Technical Lead, IBM Pune.	BigData Hadoop	18 Mar 2023	100	Insufficient knowledge to real-world tools such as cloud platforms, Hadoop tools.	PO1, PO2, PO5, PO6, PO9, PSO2
Dr. Atul V. Dusane, Associate Professor, NMIMS, Shirpur	SIH Mentoring Session	23 Aug 2024	100	Insufficient knowledge of complex engineering problems	PO2, PO6, PO7, PO11, PSO1

Resource Person with Designation	Title/Topic Addressed	Date	Number of students Participated	Gaps Addressed	Impact Analysis (POs/PSOs)
Ms. Divya Dhadve Soft Skill Trainer, Pune	Soft Skills Development programme	03 July 2023	44 (Only for Girls)	Deficiency in communication, confidence, and workplace readiness among girl students	PO10, PO12
Ms. Anisha Gaikwad HR Executive, Winjit Techfeast 2024 at Sandip University, Nasik	Soft Skills	02 Feb 2024	48	Limited awareness of corporate events and HR expectations	PO10, PO12
Mr. Pralhad Dhumal General Manager, Recruitment and Services Business, Nasik	Carrier opportunity in Automation	17 Feb 2024	128	Insufficient knowledge of automation career pathways	PO1, PO2, PO3, PSO1
Mr. Nandan Malu, CEO, Zitics Software PVT LTD. Pune	Fintech and Gen AI	22 Apr 2024	100	Limited awareness of understanding fintech domain and Generative AI applications	PO6, PO12, PSO1, PSO2
Mr. Baliram Bondge, Project Manager, SPPU, Pune	FSD/Machine Learning/Dot Net developer Courses	07 June 2024	250	Limited knowledge of full stack, ML, and .NET career skillsets	PO1, PO2, PO3, PSO1
Mr. Gurpreet Singh , Learning and Development Manager, Delhi	B4224 Career Readiness Program	08 July 2024	90	Inadequate career readiness and professional grooming	PO10, PO12

Resource Person with Designation	Title/Topic Addressed	Date	Number of students Participated	Gaps Addressed	Impact Analysis (POs/PSOs)
Mr. Yogesh Soman, Platform Program Manager in the Commercial and Off-road vehicles sector in the Product Development vertical at Mahindra & Mahindra, Nashik.	Interpersonal skills, teamwork, emotional intelligence, and empathy	24 Aug 2024	180	Weak interpersonal and emotional intelligence skills	PO9, PO10
Dr. Santosh Borde, Dean of Training and Placement, ADYPU, Pune.	Training and Placement strategies	21 Sept 2024	600	Lack of strategic understanding of placement processes	PO10, PO12
Mr. Balaram Bondge, Operation Manager Symbiosis Center for corporate and professional learning, Pune.	Symbiosis Training	25 Sept 2024	110	Limited exposure to structured corporate training methodologies	PO6, PO12

Resource Person with Designation	Title/Topic Addressed	Date	Number of students Participated	Gaps Addressed	Impact Analysis (POs/PSOs)
Mr. Laxmikant Shaligran, Mrs. Anupama Chandrachood, Mr. Yukinori Harada, Industry leader and Deputy Head of Japan delivery center, Head of Japanese language and culture training and Development, Deputy Head of Japan Delivery center Country, TCS.	Japanese Language Importance	05 Oct 2024	65	Low awareness of global opportunities and Japanese work culture	PO6, PO8, PSO1
Mr. Lokesh Mehra, Mr. Vivek Ranjan, Mr. Abhirup Ghosh, AWS Educate & RPG Foundation, Delhi	Zensar+AWS	16 Oct 2024	700+	Skill gap in cloud computing and industry-recognized certifications	PO1, PO5, PSO2
Dr. Hemraj Kumavat Assistant Professor & IPR Expert, RPCIT, Shirpur	National Level Webinar on IPR Awareness: From Innovation to Patent Filing	29 Aug 2025	800+	Limited understanding of patent filing	PO3, PO11, PSO1
Dr. Kolla Bhanu Prakash, Professor, K. L. University	Recent Research Challenges in India and Foreign Universities	27 Dec 2022	100+	Insufficient awareness of global research trends, proposal writing, and interdisciplinary research opportunities	PO1, PO2, PO4, PO12

Resource Person with Designation	Title/Topic Addressed	Date	Number of students Participated	Gaps Addressed	Impact Analysis (POs/PSOs)
Dr. A. Balaji Ganesh, Dean R&D, 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, Business Consultant at umlaut IX - Part of Accenture, Germany	Financial Assistance for Overseas Education – Admission Labs, Germany	02 Jan 2025	40	Limited awareness of overseas education funding and admission procedures	PO10, PO12
Mr. Goutham Sekaran, Business Unit Head at Galvanize Global Education, Chennai	Galvanize – Walkthrough of Free IELTS & TOEFL Course	16 Apr 2025	60	Insufficient awareness of IELTS and TOEFL preparation	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 & IPR Competence: Improved awareness of patents and IPR processes, strengthening innovation planning, problem-solving, and protection of research outcomes (PO1, PO2, PO4, PSO1, PSO2).
- Lifelong Learning & Career Planning: Increased clarity on overseas education and career pathways, promoting higher studies and self-directed learning (PO12).
- Global Communication Readiness: Improved preparedness for international education and multicultural environments through language and test-prep exposure (PO10, PO12).
- Global Employability Awareness: Motivated students to acquire additional skills and certifications, enhancing adaptability to global industry requirements (PO10, PO12).

C. Pre Placement Talks

Pre-placement talks prepare students for industry expectations by providing insights into recruitment processes, job roles, and required skills, thereby enhancing employability, confidence, and industry readiness while supporting POs and PSOs attainment as shows in Table 2.8.4.

Table No.2.8.4: Industry Awareness, and Training Activities with POs–PSOs Impact

Name of the Activity	Date	No. of Students	Gaps Addressed	Impact Analysis (POs & PSOs)
Netwin Company Orientation	08 Dec 2023	216	Gap in understanding company expectations	PO9, PO10

Name of the Activity	Date	No. of Students	Gaps Addressed	Impact Analysis (POs & PSOs)
AI Driven Patent Search	02 Dec 2024	150	Lack of exposure to IPR and patents	PO4, PO12, PSO1
Full Stack & PHP/.NET Training	15 Mar 2024	75	Skill gap in software technologies	PO5, PO10, PSO2
TCS NQT	04 Mar 2024	125	Lack of awareness of recruitment assessments	PO10, PO12
Cyber Security & Data Science Careers	04 May 2024	52	Limited awareness of emerging career domains	PO1, PO12, PSO1
Discussion on Programming Skills	07 May 2024	23	Weak programming fundamentals	PO1, PO2, PSO1
Zeal Manufacturing & Calibration Services	10 May 2024	65	Lack of exposure to calibration practices	PO1, PO5, PSO2
Pool Campus Drive Instructions	15 Oct 2024	186	Insufficient clarity on recruitment procedures	PO9, PO10
Skill Development Programme	11 Aug 2024	120	Need for overall skill enhancement	PO9, PO10, PO12
FOX Solution Company Information	29 Oct 2025	120	Lack of exposure to solution-based companies	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 as shows in Table 2.8.5.

Table No.2.8.5: Alumni Interaction and Its Impact on POs–PSOs Attainment

Resource Person	Expertise Domain & Topic	Date	No. of Students	Gaps Addressed	Impact Analysis (PO-PSO Mapping)
<p>Mr. Shubham Patil</p> <p>A seasoned Data Engineer at Deutsche Bank, Europe's leading financial institution.</p>	Data Engineer	16 May 2024	100+	Insufficient knowledge of Big Data Handling Tools	PO1, PO2, PO3, PO5, PSO1, PSO2
<p>Ms. Dhanshri Pankaj Saner</p> <p>Data Engineer at Midoffice Data Pvt. Ltd, Jaipur</p>	Data Engineer	24 Dec 2024	60	understanding company expectations	PO1, PO2, PO3, PO5, PSO1, PSO2

Resource Person	Expertise Domain & Topic	Date	No. of Students	Gaps Addressed	Impact Analysis (PO-PSO Mapping)
Mr. Lakhan Thakur, Manager, Support Engineering at Cloud Software Group, Pune,	Coding, Resume & Interview Skills	12 Apr 2025	120	Lack in professional skills	PO8, PO9, PO10, PO12, PSO1
Mr. Gaurav Patil Technical Consultant, at SAAS Institute, Pune,					
Mr. Bhushan Thakur Functional Lead at TATA Technologies, Pune					
Mr. Ram Girish Paliwal AI Developer, Feither Link Solutions, Pune	AI Developer	30 Aug 2025	120	Lack of clarity on practical challenges, role expectations, and domain-specific	PO1, PO2, PO3, PO5, PSO1, PSO2

Resource Person	Expertise Domain & Topic	Date	No. of Students	Gaps Addressed	Impact Analysis (PO-PSO Mapping)
Mr. Lakhan Thakur, (Manager, Support Engineering at Cloud Software Group, Pune)	Senior Consultant	8 Nov 2025	120	Effective communication skills (verbal & non-verbal) during interviews, Confidence and self-presentation abilities, Knowledge of interview	PO8, PO9, PO10, PO12, PSO1
Mr. Gaurav Patil (Technical Consultant, at SAAS Institute, Pune)					
Mr. Bhushan Thakur (Functional Lead at TATA Technologies Pune)					

E. Industry Supported Laboratories and Impact Analysis

To enhance industry readiness among students, the CSE (DS) Department implemented industry-oriented training initiatives. The department effectively addressed industry exposure gaps through industry-oriented training programs conducted during summer and winter vacations. These programs focused on current and relevant technologies such as Full Stack Development (FSD), Python, SQL, and related tools widely used in the IT industry. The training enhanced students' practical skills, problem-solving ability, and understanding of real world applications, thereby bridging the gap between academic learning and industry requirements. Table 2.8.6 represents sample summary of Industry-provided Training and student participation and Table 2.8.7 represents Outcome-Based Impact of Industry-Oriented Training.

Table No.2.8.6: Sample Summary of Industry-Provided Training and Student Participation

Name of Training Institute	Training Provided	No. of Students Benefitted	Topics Covered
R3 Systems India Private Limited	Classroom-based technical training, workshops, expert sessions, internship and placement support	100+	<ul style="list-style-type: none"> • Core technical training on FSD • Workshops & technical sessions • Mock interviews & resume preparation • Continuous assessment & feedback
RPG Foundation	Employability skill Development under CSR initiative (Technical + Soft Skills)	100+	<ul style="list-style-type: none"> • JAVA • Python • SQL • Soft skills & domain training
Yen Academy	Japanese Language Training for JLPT N5 & N4	50+	<ul style="list-style-type: none"> • Japanese language fundamentals • JLPT N5 & N4 exam preparation • Grammar, vocabulary & listening skills.

Table No.2.8.7: Outcome-Based Impact of Industry-Oriented Training

Aspect	Description
Gap Addressed	Bridged the gap between academic curriculum and industry requirements through hands-on training in FSD, Python, SQL, and related technologies
Skills Developed	Enhanced practical skills, problem-solving ability, and exposure to real-world applications
Relevance to PO	Contributed to PO1 (Engineering Knowledge), PO3 (Design/Development of Solutions), PO5 (Modern Tool Usage), and PO12 (Life-long Learning)
Relevance to PSO	Strengthened program-specific competencies in software development, data handling, and emerging computing technologies

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

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**
 - o The department wise examination coordinators are appointed to ensure confidentiality and security during the examination.
 - o 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 questions 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

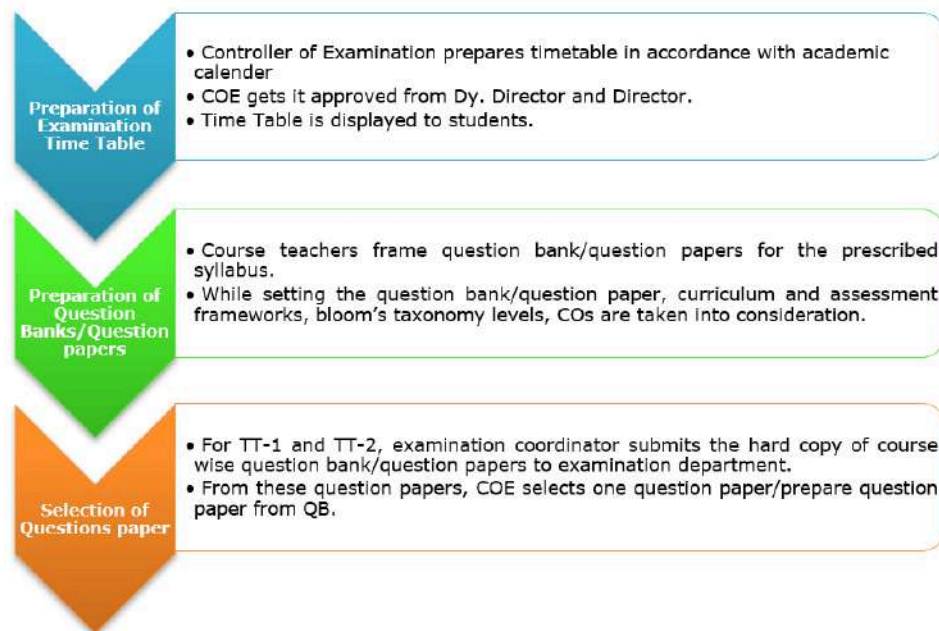


Figure 3.1.1: Term Test Examination Process Flow

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



 <div style="text-align: center;"> R. C. PATEL INSTITUTE OF TECHNOLOGY <small>(An Autonomous Institute)</small> <small>Near Nimzari Naka, Shahada Road, Shirpur - 425405, Dist. Dhule (MS)</small> <small>Telephone: 025637 259600, 901, 902 Web: www.rcpit.ac.in E-mail: principal@rcpit.ac.in</small> </div>				
A.Y.-2023-24 – Department of Computer Sciences & Engineering (Data Science) (T Y B. Tech)				
EVEN SEMSTER (SEM- VI) TT-I (Marks-30)				
Subject- Computational Linguistic (PCCS6020T)				
Day & Date- 27/03/2024, Wednesday Time- 3.00 p.m. to 4.00 p.m.				
SSN	All Questions are Compulsory	CO Mapped (Correlation Level)	Blooms' Level	Max. Marks
Q.1	Interpret the following sentences 1. I made her duck. 2. He is looking for match.	CO1	L2	5
Q.2	Apply edit distance dynamic approach for converting the word "KITTEN" into "SITTING".	CO1	L3	10
Q.3	Describe Derivational morphology with example.	CO2	L2	5
Q.4	Explain regular expression. Generate Regular expression for (a) mobile number, (b) email id, (c) First character, uppercase, contains lower case alphabets, only one digit allow in between.	CO2	L5	10

Table 3.1.5: Semester TT-2 Examination Question Paper

 <div style="text-align: center;"> R. C. PATEL INSTITUTE OF TECHNOLOGY <small>(An Autonomous Institute)</small> <small>Near Nimzari Naka, Shahada Road, Shirpur - 425405, Dist. Dhule (MS)</small> <small>Telephone: 025637 259600, 901, 902 Web: www.rcpit.ac.in E-mail: principal@rcpit.ac.in</small> </div>				
A.Y.-2023-24 – Department Computer Sciences & Engineering (Data Science) (T Y B. Tech)				
EVEN SEMSTER (SEM- VI) TT-II (Marks-30)				
Subject- Cloud Computing (PECS6051T)				
Day & Date- 29/04/2024, Monday Time- 3.00 p.m. to 4.00 p.m.				

SSN	All Questions are Compulsory	CO Mapped (Correlation Level)	Blooms' Level	Max. Marks
Q.1	Compare asymmetric encryption and symmetric encryption technique use to encrypt cloud data.	CO3	L2	5
Q.2	Draw and explain implementation of CDMI.	CO3	L2	10
Q.3	Recommend the phases during the migration of an application to a cloud.	CO2	L5	5
Q.4	Discuss in brief about 1)Amazon S3 2) Aws IAM	CO4	L2	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 Marks	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 CodeChef and LeetCode 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), 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.

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.

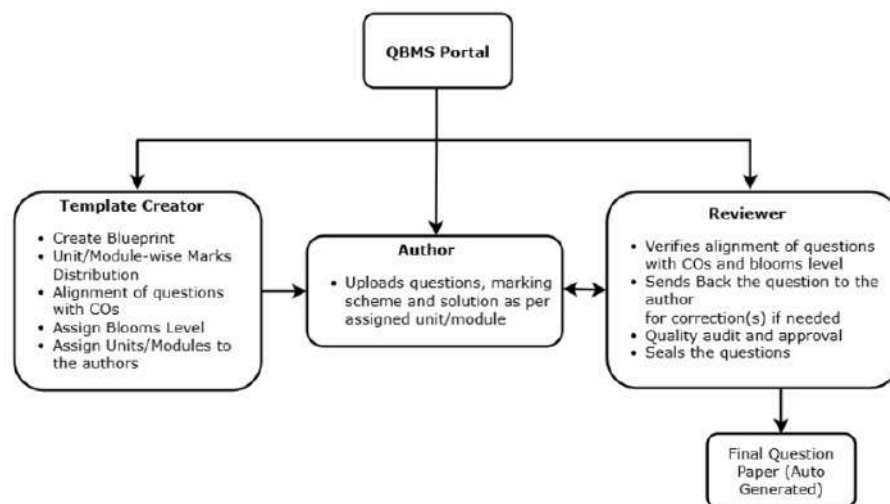


Figure 3.2.1: Process of Setting ESE Question Paper using QBMS Portal

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

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

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

A.1. Internship Report Guidelines

- Students should prepare a comprehensive report summarizing observations and learnings.
- Guidance can be sought from the Industrial Supervisor, Faculty Mentor, or department TPC for topic selection.
- Evaluation will consider:
 - Adequacy and purposefulness of the write-up.
 - Variety and relevance of learning experiences.
 - Practical applications and connections with theories/concepts from Semester I–VII.

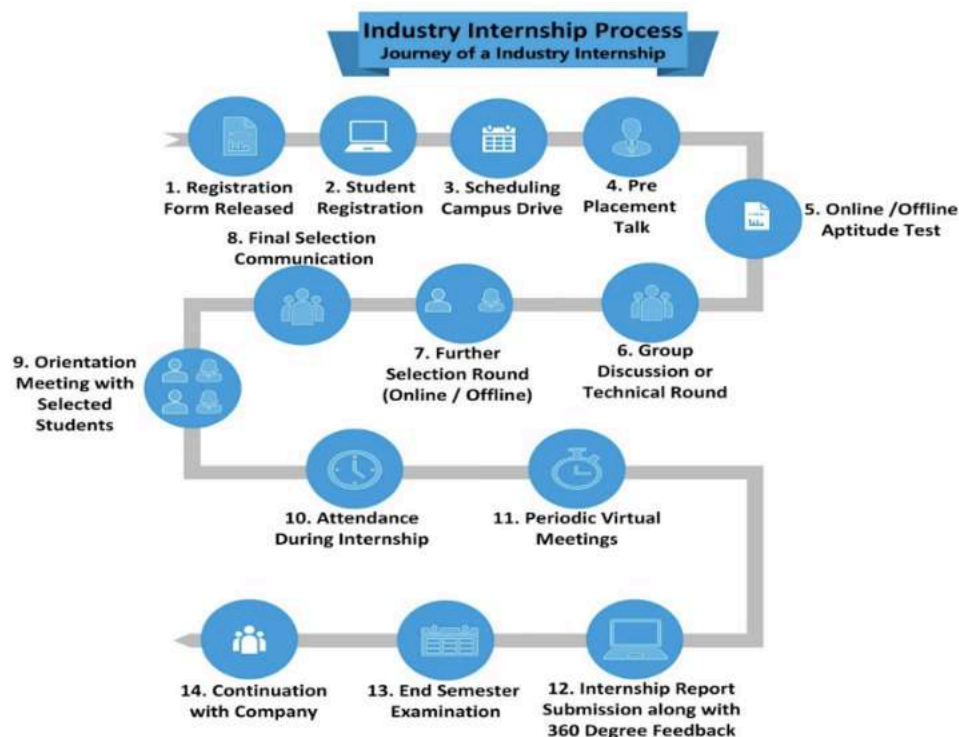


Figure 3.4.1: Flowchart of Industry Internship Process

A.2. Continuous Assessment for Industry Internship

The Continuous Assessment of the internship is intended to monitor and support the student's overall learning and development throughout the internship period. A minimum of two monitoring and evaluation assessments are performed during the internship. It focuses on evaluating the student's engagement with the assigned tasks, the practical experience gained, and the progress made in achieving the objectives of the internship. This assessment helps ensure that students are actively applying their knowledge, developing relevant skills, and demonstrating professional growth in a real-world setting. It also encourages students to document their work, reflect on their learning, and communicate their experiences effectively. Overall, continuous assessment provides a structured way to guide and enhance the student's internship journey. Following are the Rubrics of Continuous Assessment of Industry Internship in Table 3.4.1.

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 in Table 3.4.2.

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

- The In-house internship can be pursued individually or in groups.
- Maximum group size is limited to four students.
- If extending a Stage II project, outcomes should include product development, technology transfer, patents/copyrights, or at least one research publication.
- 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 Table 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 rubrics for second review evaluation are illustrated in Table 3.4.5.

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 End Semester Examination (ESE) evaluation

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.

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

Table No.3.5.1: Project Stages and Detail Description

Project Stage	Activities / Description
<p>Project Stage-I: [Sem-VI] Problem Identification and System Design</p>	<ul style="list-style-type: none"> • 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.
<p>Project Stage-II: [Sem-VII] System Development and Evaluation</p>	<ul style="list-style-type: none"> • 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 Computer Science Engineering (Data Science) follows the below procedure for Identification of projects and allocation methodology to faculty members, which is picturized in Figure 3.5.1

A. Identification of Projects and Allocation Methodology

The project development process at the Institute 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 commencement.

- **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.

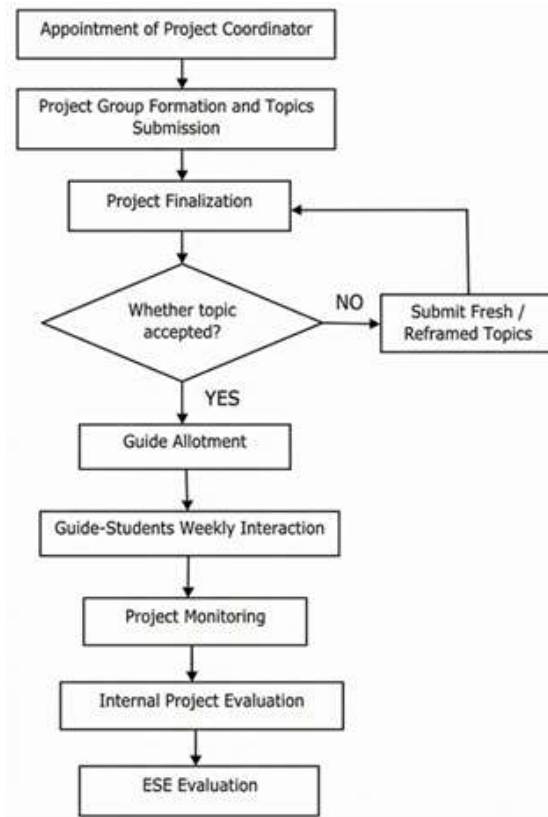


Figure 3.5.1: Process Flow for Project Topic Approval, Execution and Evaluation

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. The Continuous Monitoring of Project Stage -I is illustrated 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)	<ul style="list-style-type: none"> • Status of log book up to Monitoring–I • Introduction and problem definition with objectives • Literature review and analysis of existing systems
Monitoring –II (System Design and Partial Implementation)	<ul style="list-style-type: none"> • Status of log book up to Monitoring–II • Planning and Designing system block diagram / architecture • Partial implementation (30–40%)

Monitoring Stage	Activities
Monitoring –III (Implementation, Testing and Documentation)	<ul style="list-style-type: none"> • Status of log book up to Monitoring– III • Implementation plan for Project Stage–II • Submission of soft copy of Project Stage-I report

Each project is evaluated with internal marks and is graded according to their project quality and work done regularly. Table 3.5.3 shows the rubrics for Internal Continuous Assessment for Project Stage -I.

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

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

Final project demo for the working prototype and the report is evaluated by their respective guide and external examiner at the time of final viva. The End Semester Examination (ESE) evaluation for Project Stage-I (Semester VI) is structured to assess multiple aspects of the project, as outlined in Table 3.5.4 below.

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 synopsis/abstract.
- 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	<ul style="list-style-type: none"> • Verification of log book up to Monitoring–I • System Implementation up to 40%
Monitoring –II	<ul style="list-style-type: none"> • Verification of log book up to Monitoring–II • System Implementation up to 70%
Monitoring –III	<ul style="list-style-type: none"> • Verification of log book up to Monitoring–III • System Implementation 100% • Submission of complete project report

1. Project stage –II emphasizes design, development, experimentation, testing, data analysis, and documentation, considering realistic constraints such as economic, environmental, social, ethical, safety, manufacturability, and sustainability aspects.
2. While Table 3.5.6 shows the rubrics for Internal Continuous Assessment for Project Stage -II the Table 3.5.7 shows the ESE Assessment rubrics for Project Stage -II.
3. Each group maintains a project log book and submits a hard-bound project report at the end of Semester VII.
4. Relevant domain knowledge beyond the core syllabus is applied for effective project implementation.

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

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

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

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

C. Capstone Project Timeline

A well-defined project timeline ensures systematic planning, timely execution and effective monitoring of Project Stage-I and Stage-II. 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, thereby ensuring quality outcomes and successful project completion in alignment with academics.

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
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

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

The Computer Science and Engineering (Data Science) Department is actively committed to advancing the United Nations Sustainable Development Goals (SDGs) through data-driven education, research, and innovation. Data science, with its core strengths in analytics, machine learning, and big data, provides powerful tools to address complex societal, economic, and environmental challenges.

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

Students work collaboratively under guided mentorship to develop projects that are technically robust and socially impactful. Proposals are reviewed for SDG relevance, and projects undergo periodic evaluation for innovation, technical quality, and potential societal contribution. Below is a summary of how departmental activities align with specific SDGs, supported by student projects from academic sessions 2023–24 and 2024–25 as per Table 3.6.1 and Table 3.6.2.

A. Evidence of Addressing Sustainable Development Goals (SDGs) in Computer Science and Engineering (Data Science) Department

The Department actively engages with Sustainable Development Goals (SDGs) through various activities as shown in Table 3.6.1.

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

Sr. No.	SDG Goal	Evidence / Departmental Activities
1	<p>SDG 2 – Zero Hunger End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.</p>	<ul style="list-style-type: none"> • Crop Marketplace – A web platform connecting farmers directly to consumers, reducing food waste and improving market access. • Food Delivery System with Chatbot – AI-driven system to optimize food distribution and improve accessibility.
2	<p>SDG 3 – Good Health and Well-being Ensure healthy lives and promote well-being for all at all ages.</p>	<ul style="list-style-type: none"> • Parkinsons Disease Detection – ML model for early diagnosis using health data. • Tumor Detection using Machine Learning – AI tool to assist in medical imaging analysis. • Bells Palsy Detection using CNN – Deep learning application for neurological disorder identification.
3	<p>SDG 4 – Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.</p>	<ul style="list-style-type: none"> • AutoML – Accessible machine learning tools to democratize AI education. • NLP IoT-based Translator Bot – Breaks language barriers in learning. • Exam-AI Proctoring System – Ensures integrity in remote assessments. • Students Multifunctional Hub and COLLAX: Online Coding Interview Platform – Enhances digital learning and skill assessment.

Sr. No.	SDG Goal	Evidence / Departmental Activities
4	<p>SDG 8 – Decent Work and Economic Growth Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.</p>	<ul style="list-style-type: none"> • Crypto Market Data Analysis, Visualising and Forecasting Stocks using Dash, Virtual Currency Tracker – Tools for informed financial decisions. • Customer Churn Prediction, RFM based Churn Analysis – Supports business sustainability. • Extract Stock Sentiment from News Headlines, Financial Status Analysis using ML – Enhances economic monitoring. • AI based Resume Ranker – Improves hiring efficiency and job matching. • Crowd Funding Dapp using Blockchain – Enables decentralized entrepreneurial funding.
5	<p>SDG 9 – Industry, Innovation, and Infrastructure Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.</p>	<ul style="list-style-type: none"> • A One-Stop Integration Framework for Massive Data – Builds scalable data infrastructure. • Virtual Self Driving Car using Neural Network – Innovation in autonomous transport. • Big Data Platform for Predicting and Preventing Financial Fraud – Secure financial systems. • CNN based Traffic Sign Recognition – Intelligent transport systems. • Secure Spare: Digital Locker using Blockchain – Secure digital infrastructure.
6	<p>SDG 10 – Reduced Inequalities Reduce inequality within and among countries.</p>	<ul style="list-style-type: none"> • NLP IoT-based Translator Bot – Assists non-native speakers. • Justice Navigator: Legal Guidance Hub – Provides affordable legal information access. • AI based Resume Ranker – Can reduce bias in hiring if designed ethically.

Sr. No.	SDG Goal	Evidence / Departmental Activities
7	<p>SDG 11 – Sustainable Cities and Communities Make cities and human settlements inclusive, safe, resilient, and sustainable.</p>	<ul style="list-style-type: none"> • Virtual Self Driving Car using Neural Network – Smart transport solutions. • DeepEye AI-Powered CCTV Crime Detection – Enhances urban safety. • CNN based Traffic Sign Recognition – Improves road safety. • Practical Generative Image Inpainting – Can aid urban planning and heritage restoration.
8	<p>SDG 12 – Responsible Consumption and Production Ensure sustainable consumption and production patterns.</p>	<ul style="list-style-type: none"> • Online Price Tracker for Product – Promotes price transparency and informed consumer choices. • Integration of green computing principles in big data projects to optimize resource use.
9	<p>SDG 16 – Peace, Justice, and Strong Institutions Promote peaceful and inclusive societies, provide access to justice for all, and build effective, accountable, and inclusive institutions.</p>	<ul style="list-style-type: none"> • Realtime Financial Complaint Classification – Transparent grievance redressal. • Big Data Platform for Predicting Financial Fraud – Reduces corruption. • ML based UPI Fraud Detection – Secures digital transactions. • Blockchain Based E-Voting System – Promotes electoral transparency. • Justice Navigator: Legal Guidance Hub – Increases legal accessibility.
10	<p>SDG 17 – Partnerships for the Goals Strengthen the means of implementation and revitalize the global partnership for sustainable development.</p>	<ul style="list-style-type: none"> • A One-Stop Integration Framework for Massive Data – Facilitates cross-system data sharing and collaboration, enabling partnerships through interoperable data infrastructure.

Project carried out in the session 2023-24

Table No.3.6.2: List of Projects Carried Out in 2023-24 With Aligned SDGs

Sr. No.	Project Title	Domain Name	Related SDGs	Link with SDG Goals
1	Crypto Market Data Analysis	Finance, Business, and Market Analytics	SDG 8, SDG 9	SDG 8 (Decent work and economic growth) enables informed investment decisions SDG 9 (Industry, innovation, and infrastructure) – financial tech innovation.
2	A One-Stop Integration Framework for Massive Data	Data Science, Analytics, and Machine Learning	SDG 9, SDG 17	SDG 9 – builds resilient data infrastructure; SDG 17 (Partnerships for the goals) facilitates data sharing and integration across systems.
3	Virtual Self Driving Car using Neural Network	Artificial Intelligence and Intelligent Systems	SDG 9, SDG 11	SDG 9 – innovation in autonomous systems; SDG 11 (Sustainable cities and communities) smart transport solutions for urban safety and efficiency.
4	Parkinsons Disease Detection	Healthcare and Bioinformatics Applications	SDG 3	SDG 3 (Good health and well-being) – early diagnosis improves treatment outcomes and quality of life.
5	AutoML	Artificial Intelligence and Intelligent Systems	SDG 9, SDG 4	SDG 9 – innovation in accessible AI tools; SDG 4 (Quality education) – democratizes machine learning for broader learning/research.
6	Crop Marketplace	Web and Application Development	SDG 2, SDG 8	SDG 2 (Zero hunger) – connects farmers to markets, reduces food waste; SDG 8 – supports fair trade and farmer livelihoods.
7	Extract Stock Sentiment from News Headlines	Artificial Intelligence and Intelligent Systems	SDG 8, SDG 9	SDG 8 – helps investors gauge market sentiment for economic stability; SDG 9 – innovation in financial analytics.

Sr. No.	Project Title	Domain Name	Related SDGs	Link with SDG Goals
8	NLP IOT based Translator Bot	Artificial Intelligence and Intelligent Systems	SDG 4, SDG 10	SDG 4 – breaks language barriers in education; SDG 10 (Reduced inequalities) assists communication for non-native speakers.
9	Realtime Financial Complaint Classification using Big Data Framework	Data Science, Analytics, and Machine Learning	SDG 8, SDG 16	SDG 8 – improves financial consumer protection; SDG 16 (Peace, justice, strong institutions) – transparent grievance redressal systems.
10	Customer Churn Prediction	Data Science, Analytics, and Machine Learning	SDG 8, SDG 9	SDG 8 – helps businesses retain customers, supporting economic sustainability; SDG 9 – data-driven business innovation.
11	Practical Generative Image Inpainting Approach with Gated Convolution	Artificial Intelligence and Intelligent Systems	SDG 9, SDG 11	SDG 9 – advances in computer vision technology; SDG 11 – can aid in urban planning visualization, heritage restoration
12	Visualising and Forecasting Stocks using Dash	Finance, Business, and Market Analytics	SDG 8, SDG 9	SDG 8 – accessible financial data visualization for inclusive economic participation; SDG 9 – innovative fintech tools.
13	Big Data Platform for Predicting and Preventing Financial Fraud	Data Science, Analytics, and Machine Learning	SDG 8, SDG 16	SDG 8 – protects economic assets; SDG 16 – promotes integrity and reduces corruption in financial systems.
14	AI based Resume Ranker	Artificial Intelligence and Intelligent Systems	SDG 8, SDG 10	SDG 8 – improves hiring efficiency, matching skills to jobs; SDG 10 – can reduce bias if designed ethically for fair employment opportunities.

Sr. No.	Project Title	Domain Name	Related SDGs	Link with SDG Goals
15	Financial Status Analysis using ML	Data Science, Analytics, and Machine Learning	SDG 1, SDG 8	SDG 1 (No poverty) – identifies financial vulnerability for policy/assistance; SDG 8 – promotes economic monitoring and planning.
16	CNN based Traffic Sign Recognition	Artificial Intelligence and Intelligent Systems	SDG 9, SDG 11	SDG 9 – innovation in intelligent transport systems; SDG 11 – increases road safety in smart cities.
17	Online Price Tracker for Product	Web and Application Development	SDG 8, SDG 12	SDG 8 – empowers consumers for economic decisions; SDG 12 (Responsible consumption and production) – promotes price transparency and sustainable buying.

Project carried out in the session 2024-25

Table No.3.6.3: List of Projects Carried Out in 2024-25 With Aligned SDGs

Sr. No.	Project Title	Domain Name	Related SDGs	Link with SDG Goals
1	Virtual Currency Tracker	Finance, Business, and Market Analytics	SDG 8, SDG 9	SDG 8 (Decent Work and Economic Growth) – provides transparent financial data for investment decisions. SDG 9 (Industry, Innovation, Infrastructure) – fosters fintech innovation and digital financial systems.
2	Exam-AI The Proctoring System	Artificial Intelligence and Intelligent Systems	SDG 4, SDG 16	SDG 4 (Quality Education) – ensures integrity and accessibility in remote learning/assessments. SDG 16 (Peace, Justice, Strong Institutions) – promotes fairness, reduces academic fraud.

Sr. No.	Project Title	Domain Name	Related SDGs	Link with SDG Goals
3	DeepEye AI-Powered CCTV Crime Detection	Artificial Intelligence and Intelligent Systems	SDG 11, SDG 16	<p>SDG 11 (Sustainable Cities and Communities) – enhances urban safety and surveillance.</p> <p>SDG 16 – aids crime prevention and supports law enforcement through real-time monitoring</p>
4	Visualization of Customer Segmentation using Clustering with K-means, Naive Bayes	Data Science, Analytics, and Machine Learning	SDG 8, SDG 9	<p>SDG 8 – enables businesses to tailor services, improving market efficiency and customer satisfaction.</p> <p>SDG 9 – drives data-driven business innovation and smart marketing strategies.</p>
5	Justice Navigator: Legal Guidance Hub	Artificial Intelligence and Intelligent Systems	SDG 16, SDG 10	<p>SDG 16 – increases access to legal information, promoting transparency and justice.</p> <p>SDG 10 (Reduced Inequalities) – provides affordable legal guidance to underserved communities.</p>
6	Secure Spare: Digital Locker with Advanced Encryption Technology using Blockchain	Cybersecurity, Blockchain, and Data Privacy	SDG 9, SDG 16	<p>SDG 9 – builds resilient and secure digital infrastructure.</p> <p>SDG 16 – protects digital assets and personal data, ensuring privacy and reducing cybercrime.</p>
7	Tumor Detection using Machine Learning	Healthcare and Bioinformatics Applications	SDG 3	<p>SDG 3 (Good Health and Well-being) – enables early and accurate diagnosis, improving treatment outcomes and patient survival rates.</p>

Sr. No.	Project Title	Domain Name	Related SDGs	Link with SDG Goals
8	Students Multifunctional Hub	Web and Application Development	SDG 4, SDG 9	<p>SDG 4 – integrates academic resources, collaboration tools, and schedules to enhance learning.</p> <p>SDG 9 – leverages digital platforms to innovate educational support systems.</p>
9	ML based UPI Fraud Detection	Data Science, Analytics, and Machine Learning	SDG 8, SDG 16	<p>SDG 8 – protects digital transactions, promoting secure economic activity.</p> <p>SDG 16 – reduces financial fraud, strengthening trust in digital payment systems.</p>
10	Game Playing using Computer Vision	Artificial Intelligence and Intelligent Systems	SDG 9	<p>SDG 9 – advances AI and computer vision algorithms, fostering innovation in interactive technology and intelligent systems</p>
11	RFM based Churn Analysis using K-mean Clustering and Random Forest	Data Science, Analytics, and Machine Learning	SDG 8	<p>SDG 8 – helps businesses retain customers through data-driven insights, supporting sustainable economic growth and job stability.</p>
12	COLLAX: Online Coding Interview Platform	Web and Application Development	SDG 4, SDG 8	<p>SDG 4 – democratizes access to coding practice and evaluation, enhancing digital skills.</p> <p>SDG 8 – streamlines technical hiring, connecting talent with job opportunities efficiently.</p>
13	Food Delivery System with Chatbot	Artificial Intelligence and Intelligent Systems	SDG 2, SDG 9	<p>SDG 2 (Zero Hunger) – improves food accessibility and distribution efficiency.</p> <p>SDG 9 – innovates logistics and customer service through AI-driven automation.</p>

Sr. No.	Project Title	Domain Name	Related SDGs	Link with SDG Goals
14	Bells Palsy Detection using CNN	Healthcare and Bioinformatics Applications	SDG 3	SDG 3 – provides a tool for early detection of neurological conditions, improving diagnostic accuracy and enabling timely medical intervention.
15	Crowd Funding Dapp using Blockchain	Cybersecurity, Blockchain, and Data Privacy	SDG 8, SDG 9	SDG 8 – enables decentralized fundraising, supporting entrepreneurs and small businesses. SDG 9 – builds transparent, trustless financial platforms using blockchain innovation.
16	Blockchain Based E-Voting System	Cybersecurity, Blockchain, and Data Privacy	SDG 16	SDG 16 – enhances electoral transparency, security, and accessibility, reducing fraud and strengthening democratic institutions.

B. Published Research Supporting SDGs in Department of Computer Science and Engineering (Data Science)

The Department of Computer science and Engineering (Data Science) demonstrates a strong commitment to research that addresses real-world challenges while aligning with key Sustainable Development Goals (SDGs). Faculty and student publications focus on impactful domains such as healthcare (Obesity Risk Prediction, Breast Cancer Detection, Medicare Fraud Detection) supporting SDG 3 (Good Health), legal and educational innovation (NyayEase, Exam AI) furthering SDG 4 (Quality Education) and SDG 16 (Peace and Justice), and economic systems (Smart Hire, Blockchain Rental System) promoting SDG 8 (Decent Work). This portfolio of 15+ peer-reviewed publications reflects a culture of applied, solution-oriented research that bridges advanced data science with sustainable societal development

Table 3.6.4: Paper Published in A.Y. 2023-24

Sr. No.	Title of paper	Title of Journal/ Conference	Volume, Issue, ISSN and Year	Aligned SDG Goal
1	Placement Prediction using Machine Learning	International Journal of Scientific Development and Research	Volume 9, Issue 6, ISSN: 2455-2631, Year: 2024	SDG 4 (Quality Education), SDG 8 (Decent Work)
2	SONAR Rock vs Mine Prediction	Journal of Emerging Technologies and Innovative Research	Volume 11, Issue 5, ISSN: 2349-5162, Year: 2024	SDG 9 (Industry, Innovation, Infrastructure)
3	Chatbot for College Website	International Journal of Research Publication and Reviews	Volume 5, Issue 6, ISSN: 2582-7421, Year: 2024	SDG 4 (Quality Education)

Sr. No.	Title of paper	Title of Journal/ Conference	Volume, Issue, ISSN and Year	Aligned SDG Goal
4	Obesity Disease Risk Prediction	Journal of Emerging Technologies and Innovative Research (JETIR)	Volume 11, Issue 6, ISSN: 2349-5162, Year: 2024	SDG 3 (Good Health and Well-being)
5	E-Commerce Product Delivery Analysis	Iconic Research and Engineering Journal	Volume 2, Issue 9, ISSN: 2456-8880, Year: 2024	SDG 9 (Industry, Innovation, Infrastructure), SDG 12 (Responsible Consumption)
6	Smart Scholar: A Modern Approach to Research Paper Recommendations	Iconic Research and Engineering Journals (IRE)	Volume 7, Issue 12, ISSN: 2456-8880, June 2024	SDG 4 (Quality Education), SDG 9 (Industry, Innovation, Infrastructure)
7	Image Stylization	International Journal of Scientific Research & Engineering Trends	Volume 10, Issue 3, Year: 2024	SDG 9 (Industry, Innovation, Infrastructure)
8	Sentiment Analysis using ktrain	Journal of Emerging Technologies and Innovative Research (JETIR)	Volume 11, Issue 5, ISSN: 2349-5162, Year: 2024	SDG 9 (Industry, Innovation, Infrastructure)
9	Breast Cancer Detection	International Journal of Research Publication and Reviews	Volume 5, Issue 6, ISSN: 2582-7421, Year: 2024	SDG 3 (Good Health and Well-being)
10	Image Colorization	International Journal of Research Publication and Reviews	Volume 5, Issue 6, ISSN: 2582-7421, Year: 2024	SDG 9 (Industry, Innovation, Infrastructure)
11	Leveraging Gemini AI: An Automated ATS Resume Scanner	International Journal of Research Publication and Reviews	Volume 5, Issue 6, ISSN: 2582-7421, Year: 2024	SDG 8 (Decent Work and Economic Growth)
12	Medicare Fraud Detection using Machine Learning	Iconic Research and Engineering Journals	Volume 7, Issue 11, e-ISSN: 2456-8880, Year: 2024	SDG 3 (Good Health and Well-being), SDG 16 (Peace, Justice, Strong Institutions)

Table 3.6.5: Paper Published in A.Y. 2024-25

Sr. No.	Title of paper	Title of Journal/ Conference	Volume, Issue, ISSN and Year	Aligned SDG Goal
1	NyayEase – An Integrated Legal Assistance Platform	Research & Reviews: Journal of Internet & Networking	Volume 1, Issue 2,	SDG 16 (Peace, Justice and Strong Institutions), SDG 10 (Reduced Inequalities)
2	Exam AI: Ensuring Fairness & Integrity in Online Assessment	International Journal of Innovations in Engineering and Science	Volume 10, Issue 7,	SDG 4 (Quality Education), SDG 10 (Reduced Inequalities)
3	Smart Hire: AI Interview Platform	International Journal for Research in Applied Science & Engineering Technology (IJRASET)	Volume 13, Issue 5, ISSN: 2321-9653, Year: 2025	SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure)
4	Smart Contract-Based Decentralized Rental System for Housing	International Journal for Research in Applied Science & Engineering Technology (IJRASET)	Volume 13, Issue 5, ISSN: 2321-9653	SDG 11 (Sustainable Cities and Communities), SDG 9 (Industry, Innovation and Infrastructure)
5	Real Estate Explorer: AI-Driven Predictions and Data Analytics	Journal of Advanced Research in Artificial Intelligence & Its Applications	Volume 2, Issue 2, e-ISSN: 3048-6440, Year: 2025	SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities)
6	Blockchain Based Fake Product Identification	International Journal of Research Publication and Reviews	Volume 6, Issue 5, ISSN: 2582-7421, Year: 2025	SDG 9 (Industry, Innovation and Infrastructure), SDG 12 (Responsible Consumption and Production)

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

The program actively promotes the integration of Sustainable Development Goals (SDGs) through curriculum enrichment, skill-based training, and student-led extracurricular initiatives. A student-led ML deployment workshop supported multiple UN Sustainable Development Goals by promoting SDG 4 (Quality Education) through peer learning and practical AI training. It advanced SDG 3 (Good Health and Well-being) via ML models for diabetes and heart disease prediction, while strengthening SDG 9 (Industry, Innovation and Infrastructure) by developing innovation capacity in real-world AI deployment.

Table 3.6.6: Relevance of Department Activities to SDG Goal

SDG Goal	Departmental Activities
SDG 4 – Quality Education	<p>Student-led Technical Workshop on ML Deployment (9 Nov 2024):</p> <p>A hands-on session where senior students taught peers practical skills in ML model training, Flask web development, and deployment for real-world health applications (Diabetes & Heart Disease Prediction).</p> <p>Promotes peer-to-peer learning, technical skill democratization, and industry-relevant competency in AI/ML.</p>
SDG 3 – Good Health and Well-being	<p>Applied ML for Healthcare: The session included building deployable models for Diabetes Prediction and Heart Disease Risk Prediction directly contributing to early diagnosis tools and digital health solutions.</p>
SDG 9 – Industry, Innovation, and Infrastructure	<p>Building Innovation Capacity: Training students in end-to-end ML deployment (from model training to Flask-based web apps) fosters innovation skills and supports digital infrastructure development.</p>

The Department actively promotes SDG integration not only through curriculum and projects but also via student-led extracurricular activities that foster holistic development, innovation, and social responsibility. One such flagship event was Squid Maze a technical and creative event organized as part of the annual technical festival Converges 2025, which reflects the department’s commitment to SDG 4 (Quality Education), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 17 (Partnerships for the Goals).

Squid Maze was organized by student clubs Data Polaris and Skill Bhavan on 27th to 28th February 2025, with active guidance from faculty coordinators. Inspired by the popular series “Squid Game,” the event was reimaged to incorporate technical challenges, teamwork, and problem-solving in a competitive yet collaborative environment. The event attracted 200+ participants from across colleges, including RCPIT and SVKM IoT Dhule, demonstrating wide engagement and inclusive participation.

Table 3.6.7: Relevance of Squid Maze activity to SDG Goal

SDG Goal	How Squid Maze Supports the Goal
SDG 4: Quality Education	<ul style="list-style-type: none"> • Provided hands-on learning through three rounds of challenges: physical coordination, creative coding, and debugging. • Encouraged peer learning, critical thinking, and practical application of programming skills in a low-stakes, high-engagement setting. • Promoted inclusivity by welcoming both in-house and out-house participants, ensuring broader access to technical education.
SDG 9: Industry, Innovation, and Infrastructure	<ul style="list-style-type: none"> • Round 2 required teams to create shapes using programming languages and ChatGPT prompts, fostering innovation in human-AI collaboration. • The finale involved debugging sequential code and integrating mismatched functions, simulating real-world software testing and development workflows. • The event was managed using a custom-built platform for score monitoring, demonstrating student capability in developing digital infrastructure for event management.

SDG Goal	How Squid Maze Supports the Goal
SDG 8: Decent Work and Economic Growth	<ul style="list-style-type: none"> • Enhanced participants problem-solving, teamwork, and technical skills—key competencies for employability in the IT and data science sectors. • Encouraged entrepreneurial spirit through event planning, sponsorship acquisition (Mataka's Biryani, Jai Santaji Travels), and marketing activities.
SDG 17: Partnerships for the Goals	<ul style="list-style-type: none"> • Collaboration between two student clubs (Data Polaris and Skill Bhavan) and support from faculty and institutional leadership. • Engaged external sponsors, demonstrating academia-industry-community linkages. • Included participants from multiple institutions, promoting inter-institutional collaboration and knowledge sharing.

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
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D. Assessment tools, their processes, and relevance to CO attainment

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

Table 3.7.2: Assessment Tools, Processes and Their Relevance to CO Attainment

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

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 & 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.

$$\text{Direct Attainment (CO)} = (0.5 \times \text{Internal Attainment}) + (0.5 \times \text{External Attainment})$$

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:

$$\text{Overall CO Attainment} = 0.8 \times \text{CO Attainment (Direct)} + 0.2 \times \text{CO Attainment (Indirect)}$$

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

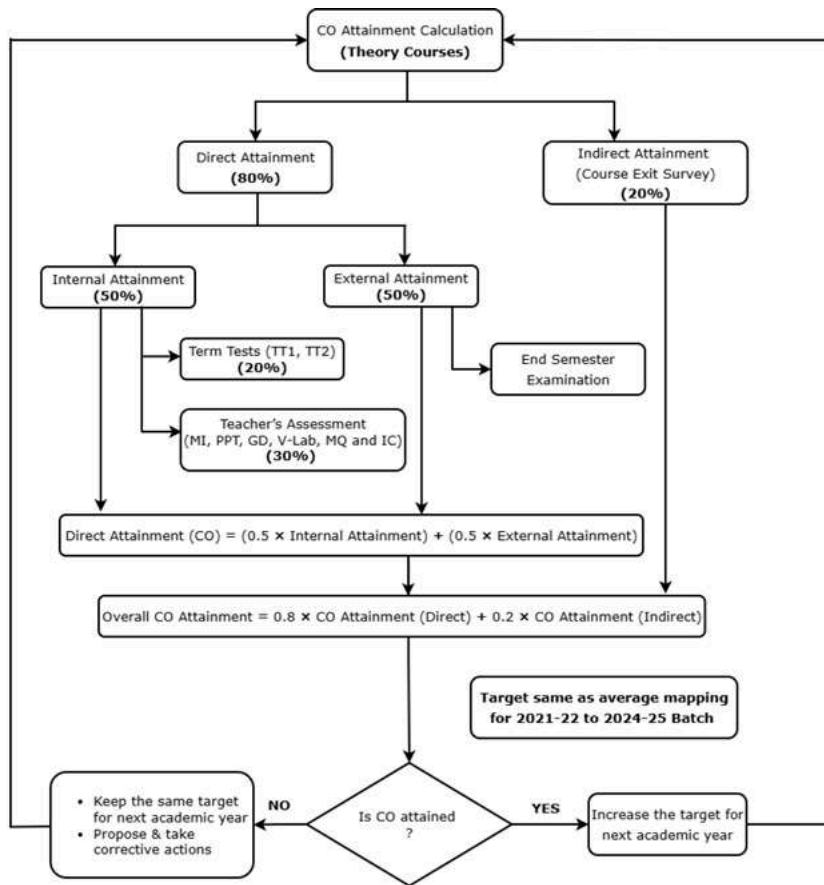


Figure 3.7.1: Course Outcome Attainment Calculation Process for Theory Courses

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

Ø **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.

$$\text{Direct Attainment (CO)} = (0.5 \times \text{Internal Attainment}) + (0.5 \times \text{External Attainment})$$

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:

$$\text{Overall CO Attainment} = 0.8 \times \text{CO Attainment (Direct)} + 0.2 \times \text{CO Attainment (Indirect)}$$

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

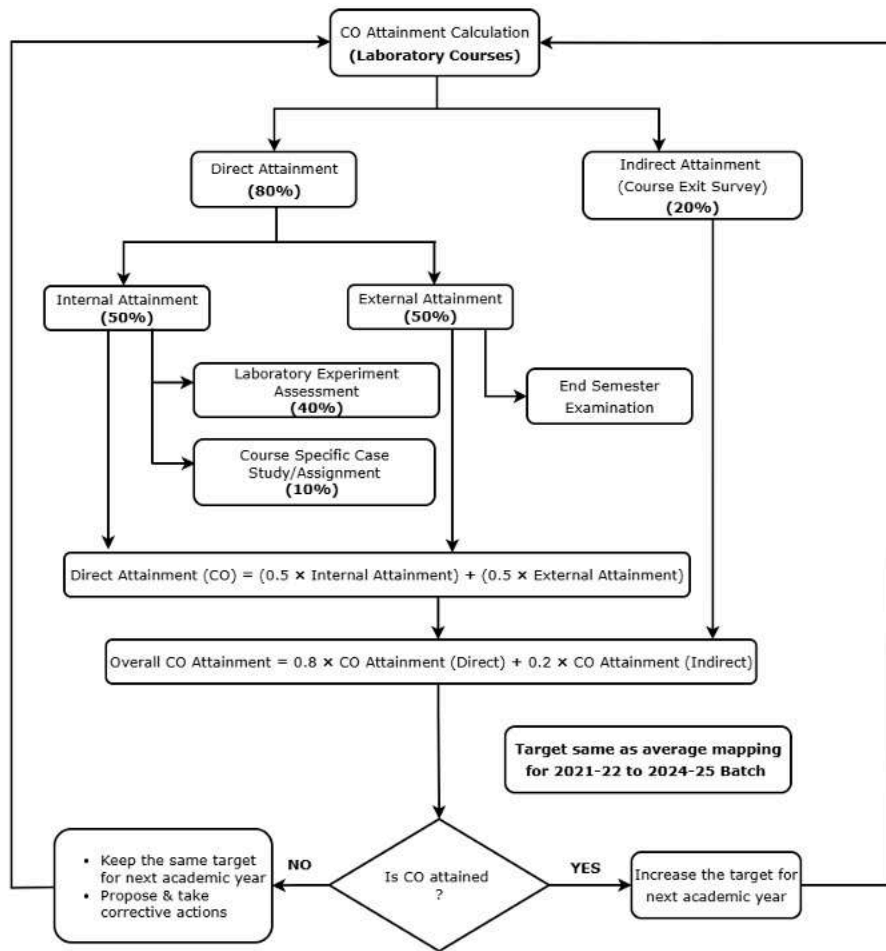


Figure 3.7.2: Course Outcome Attainment Calculation Process for Laboratory Courses

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

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

Course	CO1	CO2	CO3	CO4	CO5	CO6
C101	1.63	1.38	1.36	1.53	1.53	1.61
C102	1.86	1.85	1.86	1.86		

Course	CO1	CO2	CO3	CO4	CO5	CO6
C103	1.69	1.67	1.86	1.69		
C104	2.34	2.24	2.25	2.24	2.11	2.08
C105	1.68	1.66	1.66	1.72	1.50	
C106	1.93	2.24	2.42	1.94		
C107	2.98	2.96	2.97	2.00	2.03	2.96
C108	2.80	2.78	1.80	1.84	1.84	
C109	2.40	2.22	2.37	2.47	2.39	
C110	1.77	1.76	1.72	1.73	1.75	
C111	1.54	1.39	1.39	1.54	1.56	1.52
C112	1.62	1.62	1.70	1.60		
C113	1.76	1.77	1.76	1.78		
C114	1.78	1.72	1.74	1.77	1.59	
C115	1.78	1.87	1.95	1.98	1.46	1.46
C116	2.20	2.21	2.28	2.21	2.18	2.02
C117	2.33	2.33	2.33	2.17		
C118	1.75	2.38	1.76	2.16	2.09	
C119	1.62	1.74	1.70	1.77	1.62	1.30
C120	2.48	2.81	2.80	2.81	2.78	2.78
C201	2.63	2.54	2.55	2.53	2.36	
C202	1.75	1.72	1.76	1.75	1.57	
C203	2.94	2.92	2.68	2.45	1.96	
C204	2.13	2.21	2.13	2.12	1.99	
C205	2.97	2.97	2.97	2.96	2.99	
C206	1.66	1.68	1.57	1.82		
C207	2.94	2.92	2.85	2.94		
C208	1.72	1.72	1.8	1.68	1.56	
C209	2.8	2.59	2.64	2.6	2.64	
C210	2.94	2.95	2.83	2.77	2.96	
C211	2.92	2.92	2.95	2.9	2.9	
C212	1.79	1.81	1.61			
C213	2.83	2.85	2.81			
C214	2.57	2.6	2.39	2.42	2.27	2.27
C215	2.77	2.8	2.75	2.78	2.79	2.79
C216	1.48	1.5	1.39	1.26		
C217	2.8	2.78	2.71	2.74		

Course	CO1	CO2	CO3	CO4	CO5	CO6
C218	1.64	1.65	1.47			
C219	1.84	2.66	1.83			
C220	2.51	2.64	2.66	2.77	2.35	
C221	2.89	2.88	2.88			
C222	2.94	2.94	2.95	2.91	2.92	
C223	1.33	1.34	1.31	1.35	1.36	1.36
C301	2.68	2.52	2.83	2.85		
C302	2.8	2.8	2.79	1.85		
C303	2.68	2.41	2.82	2.18		
C304	2.28	2.92	2.9	2.9		
C305	2.7	2.81	2.67	2.84	2.35	2.32
C306	2.82	2.85	2.87	2.88	2.87	2.84
C307	2.95	2.94				
C308	2.68	2.76	2.36			
C309	2.96	2.96	2.96			
C310	2.16	2.16	2.16	2.16	2.16	2.16
C311	2.94	2.94	2.95	2.95	2.96	
C312	1.64	1.68	1.67	1.66		
C313	2.07	1.87	1.85			
C314	1.13	1.15	1.13			
C315	2.36	2.37	2.35	2.44		
C316	2.80	2.81	2.79	2.80		
C317	2.24	2.64	2.32			
C318	2.96	2.96	2.92			
C319	2.98	2.97	2.97	2.96	2.96	2.97
C320	2.70	2.69	2.78	2.70		
C321	2.66	2.65	2.66	2.66		
C322	2.91	2.87	2.87	2.84	2.86	
C401	2.96	2.48	2.67			
C402	2.90	2.88	2.87			
C403	2.32	2.23	2.15	1.99		
C404	2.56	2.55	2.55	2.55		
C405	2.96	2.96				
C406	2.92	2.79	2.42			
C407	2.08	2.39	2.24			

PO Attainment

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	1.17	0.78	PO3	1.01	0.43	PO6	PO7	PO8	PO9	PO10	PO11	0.39
C102	1.20	1.07	0.53	0.53	PO5	PO6	PO7	PO8	PO9	0.93	0.53	0.53
C103	0.97	0.60	0.48	0.48	PO5	0.93	1.23	0.93	PO9	0.48	0.50	0.50
C104	1.37	0.68	0.68	0.68	0.71	PO6	PO7	PO8	0.71	0.68	PO11	0.68
C105	0.92	0.46	0.46	0.46	0.46	PO6	PO7	PO8	PO9	0.46	PO11	0.46
C106	1.45	1.00	0.68	0.64	PO5	0.53	0.86	0.53	PO9	0.98	0.64	0.64
C107	1.73	0.87	0.87	0.87	1.00	PO6	PO7	PO8	1.00	0.87	PO11	0.87
C108	1.39	0.69	0.69	0.69	0.69	PO6	PO7	PO8	PO9	0.69	PO11	0.69
C109	0.73	0.70	0.78	0.75	0.80	PO6	PO7	PO8	1.17	1.08	PO11	0.76
C110	1.00	1.40	1.00	1.40	0.70	PO6	1.00	PO8	0.50	0.50	0.50	1.00
C111	1.13	0.76	PO3	0.99	0.40	PO6	PO7	PO8	PO9	PO10	PO11	0.38
C113	1.00	0.75	0.50	0.50	PO5	1.00	1.50	1.00	PO9	0.50	0.50	0.50
C114	0.97	0.66	0.66	1.08	0.66	PO6	0.43	0.43	0.43	0.87	0.43	0.87
C115	1.03	0.85	0.71	1.08	0.68	PO6	PO7	1.03	0.50	0.52	0.52	0.52
C116	0.68	0.68	0.70	0.68	PO5	PO6	PO7	PO8	0.68	0.68	PO11	0.66
C117	1.53	1.27	0.72	0.72	PO5	0.62	0.93	0.62	PO9	1.02	0.71	0.71
C118	1.28	0.91	0.91	1.50	0.91	PO6	0.67	0.67	0.67	1.17	0.67	1.33
C119	0.97	0.89	0.98	0.82	0.74	0.65	PO7	PO8	PO9	0.49	PO11	0.49
C120	PO1	0.87	0.93	0.93	0.93	PO6	PO7	PO8	0.93	0.91	PO11	0.87
C201	1.60	0.81	0.80	0.81	0.75	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C202	0.97	0.49	0.48	0.48	0.77	PO6	PO7	PO8	0.49	0.49	PO11	0.48
C203	1.83	0.92	0.90	0.90	1.43	PO6	PO7	PO8	0.92	0.92	PO11	0.86
C204	1.29	1.03	1.02	1.27	1.67	PO6	PO7	PO8	0.64	1.53	0.65	0.64
C205	2.00	1.60	1.60	2.00	2.60	PO6	PO7	PO8	1.00	2.40	1.00	1.00
C206	0.97	0.85	0.83	0.48	0.48	PO6	PO7	PO8	PO9	PO10	PO11	0.47
C207	1.99	1.74	1.74	1.00	1.00	PO6	PO7	PO8	PO9	PO10	PO11	0.98
C208	1.43	0.86	0.48	0.96	0.47	PO6	PO7	PO8	PO9	0.48	PO11	PO12
C209	2.63	1.57	0.88	1.74	0.87	PO6	PO7	PO8	PO9	0.88	PO11	PO12
C210	2.36	2.35	1.75	2.55	2.15	2.80	2.80	2.89	2.80	1.90	1.54	1.75
C211	3.00	2.00	2.00	2.00	3.00	2.00	1.50	3.00	3.00	1.67	3.00	3.00
C212	1.02	0.69	1.60	0.93	1.07	PO6	PO7	PO8	PO9	PO10	PO11	1.50

C213	1.93	1.29	2.90	1.93	1.93	PO6	PO7	PO8	PO9	PO10	PO11	2.90
C214	1.58	1.31	1.14	1.53	2.15	PO6	PO7	PO8	PO9	0.78	0.78	PO12
C215	1.87	1.56	1.40	1.87	2.80	PO6	PO7	PO8	PO9	0.93	0.93	PO12
C216	0.66	0.37	PO3	0.39	0.39	PO6	PO7	PO8	PO9	PO10	PO11	0.37
C217	1.63	0.93	PO3	0.93	0.93	PO6	PO7	PO8	PO9	PO10	PO11	0.93
C218	1.03	0.73	0.45	0.58	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.38
C219	1.58	1.23	0.87	0.94	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.53
C220	0.77	0.87	0.77	0.77	PO5	1.92	1.59	2.05	1.22	0.83	0.93	0.85
C221	1.93	0.97	1.45	0.97	0.97	1.93	0.97	1.93	1.29	0.97	PO11	0.97
C222	3.00	2.00	2.00	2.00	3.00	2.00	1.50	3.00	3.00	1.67	3.00	3.00
C301	2.65	1.47	2.02	2.48	1.34	PO6	PO7	PO8	PO9	PO10	0.90	0.82
C302	2.80	1.56	2.00	2.27	1.30	PO6	PO7	PO8	PO9	PO10	0.83	0.93
C303	1.92	1.89	1.67	1.19	1.32	PO6	PO7	PO8	0.83	PO10	PO11	1.04
C304	2.12	2.18	1.93	1.43	1.50	PO6	PO7	PO8	1.00	PO10	PO11	1.18
C305	1.83	0.92	0.92	0.92	0.92	1.83	PO7	1.83	PO9	PO10	PO11	0.92
C306	1.93	0.97	0.97	0.97	0.97	1.93	PO7	1.93	PO9	PO10	PO11	0.97
C307	2.00	2.00	1.00	1.00	1.00	PO6	PO7	PO8	PO9	PO10	PO11	1.00
C308	1.99	2.55	2.26	2.55	0.85	1.77	0.75	PO8	1.70	0.85	0.83	1.70
C309	2.33	3.00	2.67	3.00	1.00	2.00	1.00	PO8	2.00	1.00	1.00	2.00
C310	PO1	PO2	0.73	PO4	1.47	1.83	PO7	2.20	1.83	2.20	0.73	0.73
C311	3.00	2.00	2.00	2.00	3.00	2.00	1.50	3.00	3.00	1.67	PO11	3.00
C312	0.47	1.09	1.09	1.40	1.40	1.40	0.70	1.40	1.09	1.05	PO11	1.40
C414	3.00	2.00	1.67	1.50	2.33	3.00	3.00	3.00	2.60	2.60	2.33	1.50
C315	1.00	0.76	0.76	0.76	0.76	1.57	PO7	1.14	0.77	0.76	PO11	0.76
C313	1.13	0.92	0.92	0.92	0.56	PO6	PO7	PO8	0.53	0.53	0.53	0.56
C314	0.47	0.39	0.39	0.39	0.23	PO6	PO7	PO8	0.23	0.23	0.23	0.23
C316	1.24	0.93	0.93	0.93	0.93	1.87	PO7	1.40	0.93	0.93	PO11	0.93
C317	1.54	1.53	1.82	1.29	0.77	PO6	PO7	PO8	PO9	PO10	PO11	0.81
C318	2.00	2.00	2.33	1.67	1.00	PO6	PO7	PO8	PO9	PO10	PO11	1.00
C319	2.00	1.83	1.33	1.50	1.00	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C320	1.78	1.56	2.01	2.68	2.23	PO6	0.92	0.88	0.89	0.89	0.89	0.89
C321	1.73	1.73	1.95	2.60	2.17	1.73	0.87	0.87	0.87	0.87	0.87	0.87
C322	2.00	1.67	1.40	1.50	1.50	2.50	1.75	2.33	2.00	2.25	2.00	1.67

C403	1.67	1.69	1.66	1.71	0.68	PO6	PO7	PO8	PO9	PO10	PO11	0.68
C404	2.08	2.08	2.08	2.08	0.83	PO6	PO7	PO8	PO9	PO10	PO11	0.83
C405	3.00	1.50	1.50	2.00	2.50	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C413	1.90	1.66	0.94	1.66	0.95	PO6	PO7	PO8	PO9	PO10	PO11	0.95
C412	1.80	1.57	0.89	1.57	0.90	PO6	PO7	PO8	PO9	PO10	PO11	0.90
C406	1.45	0.90	0.86	0.90	0.90	1.57	PO7	1.33	0.78	0.90	PO11	0.90
C411	1.76	1.16	0.88	PO4	0.88	1.80	PO7	1.80	PO9	PO10	PO11	PO12
C407	1.02	0.70	0.74	0.70	0.70	1.42	PO7	1.12	0.71	0.70	PO11	0.70
C410	1.74	1.15	0.87	PO4	0.87	1.73	PO7	1.73	PO9	PO10	PO11	PO12
C408	1.15	0.69	0.53	0.73	0.62	PO6	PO7	1.30	0.50	0.56	PO11	0.55
C409	2.00	1.67	1.40	1.50	1.50	2.50	1.75	2.33	2.00	2.25	2.00	1.67
C112	0.88	0.88	0.44	PO4	PO5	PO6	PO7	PO8	PO9	0.78	0.44	0.44
C223	0.56	0.39	0.47	0.67	0.78	PO6	PO7	PO8	0.33	0.33	0.33	0.83
C401	1.78	1.45	1.45	1.45	0.89	PO6	PO7	PO8	0.89	0.89	0.89	0.89
C402	1.93	1.61	1.61	1.61	0.97	PO6	PO7	PO8	0.97	0.97	0.97	0.97

PO Attainment Indirect

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PROGRAM E	2.92	2.97	2.85	2.67	2.98	2.12	2.02	2.92	2.95	2.97	2.27	2.98

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	1.60	1.23	1.18	1.26	1.17	1.73	1.30	1.64	1.18	1.01	0.99	0.98
InDirect Attainment	2.92	2.97	2.85	2.67	2.98	2.12	2.02	2.92	2.95	2.97	2.27	2.98
Overall Attainment	1.86	1.58	1.51	1.54	1.53	1.81	1.44	1.90	1.53	1.40	1.25	1.38

PSO Attainment

Course	PSO1	PSO2
C101	PSO1	PSO2
C102	PSO1	PSO2
C103	PSO1	PSO2
C104	PSO1	PSO2

C105	PSO1	PSO2
C106	0.23	PSO2
C107	PSO1	PSO2
C108	PSO1	PSO2
C109	0.76	1.50
C110	0.50	PSO2
C111	PSO1	PSO2
C112	PSO1	PSO2
C113	PSO1	PSO2
C114	0.66	PSO2
C115	1.18	PSO2
C116	0.62	0.66
C117	0.40	PSO2
C118	0.91	PSO2
C119	1.13	0.81
C120	PSO1	0.87
C201	1.13	1.98
C202	1.46	PSO2
C203	2.75	PSO2
C204	1.16	1.53
C205	1.80	2.40
C206	0.60	PSO2
C207	1.24	PSO2
C208	0.48	PSO2
C209	0.88	PSO2
C210	2.74	2.74
C211	2.00	2.50
C212	0.87	PSO2
C213	1.61	PSO2
C214	2.35	1.86
C215	2.80	2.33
C216	0.39	PSO2
C217	0.93	PSO2
C218	0.68	0.90
C219	1.14	1.75

C220	0.80	1.53
C221	1.29	1.93
C222	2.00	2.50
C223	0.39	0.67
C301	1.14	2.04
C302	1.07	1.90
C303	1.69	1.93
C304	1.93	2.00
C305	0.92	PSO2
C306	0.97	PSO2
C307	2.00	PSO2
C308	1.45	1.70
C309	1.67	2.00
C310	PSO1	PSO2
C311	2.00	2.50
C312	1.17	1.40
C313	1.28	1.48
C314	0.54	0.62
C315	1.14	1.71
C316	1.40	2.10
C317	0.78	1.62
C318	1.00	2.00
C319	1.50	2.17
C320	1.35	2.39
C321	1.30	2.31
C322	2.00	2.25
C401	2.01	2.34
C402	2.26	2.58
C403	0.68	1.70
C404	0.83	2.08
C405	1.50	2.00
C406	1.47	2.06
C407	1.20	1.64
C408	0.56	0.87
C409	2.00	2.25

C410	0.87	2.68
C411	0.88	2.70
C412	1.80	1.80
C413	1.90	1.90
C414	2.00	2.33

PSO Attainment Indirect

Survey	PSO1	PSO2
PROGRAM EXIT SUR'	3.00	3.00

PSO Attainment Level

Course	PSO1	PSO2
Direct Attainment	1.29	1.87
InDirect Attainment	3.00	3.00
Overall Attainment	1.63	2.10

4 STUDENTS' PERFORMANCE (120)

Total Marks 101.66

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	60	60	60	60	0
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	114	120	59	59	60	60	0
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	12	7	7	6	6	0
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	3	3	3	3	0

Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	120	138	69	69	69	69	0
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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)	120				
2024-25 (CAYm1)	138	122			
2023-24 (CAYm2)	69	61	66		
2022-23 (CAYm3)	69	58	63	62	
2021-22 (LYG)	69	62	63	63	63
2020-21 (LYGm1)	69	63	68	67	67
2019-20 (LYGm2)	0	0	0	0	0

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	114	6	100.00
2024-25 (CAYm1)	120	120	6	105.00
2023-24 (CAYm2)	60	59	3	103.33

Average $[(ER1 + ER2 + ER3) / 3] = 102.78 \approx 100$

Assessment : 20.00

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

Total Marks 14.13

Institute Marks : 14.13

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).	69.00	69.00	0.00
B=No. of students who graduated from the program in the stipulated course duration	63.00	67.00	0.00
Success Rate (SR)= (B/A) * 100	91.30	97.10	0.00

Average SR of three batches $((SR_1 + SR_2 + SR_3)/3)$: 94.20

SR Points : 14.13

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 7.05

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)	7.40	7.66	6.90
Y=Total no. of successful students	122.00	61.00	58.00
Z=Total no. of students appeared in the examination	126.00	62.00	62.00
API [X*(Y/Z)]	7.17	7.54	6.45

Average API[(AP1+AP2+AP3)/3] : 7.05

Assessment = Average API : 7.05

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

Total Marks 6.71

Institute Marks : 6.71

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)	7.54	7.06	6.44
Y=Total no. of successful students	66.00	63.00	63.00
Z=Total no. of students appeared in the examination	68.00	65.00	68.00
API [X * (Y/Z)]	7.32	6.84	5.97

Average API [(AP1 + AP2 + AP3)/3] : 6.71

Assessment [AverageAPI] : 6.71

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

Total Marks 7.36

Institute Marks : 7.36

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)	7.43	7.05	7.83
Y=Total no. of successful students	62.00	63.00	67.00
Z=Total no. of students appeared in the examination	63.00	63.00	68.00
API [X*(Y/Z)]:	7.31	7.05	7.71

Average API [(AP1 + AP2 + AP3)/3] : 7.36

Assessment [1.5 * AverageAPI] : 7.36

4.6 Placement, Higher Studies and Entrepreneurship (30)

Total Marks 21.41

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	66.00	67.00	0.00
X=No. of students placed	40.00	51.00	0.00
Y=No. of students admitted to higher studies	1.00	3.00	0.00
Z= No. of students taking up entrepreneurship	0.00	0.00	0.00
Placement Index(P) = $((X + Y + Z)/FS) * 100$:	62.12	80.60	0.00

Average Placement Index = $(P_{-1} + P_{-2} + P_{-3})/3$: 71.36

Placement Index Points: 21.41

4.7 Professional Activities (25)

Total Marks 25.00

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	Club Data Polaris
2	Skillbhavan
3	Google Developer Student Club (GDSC)
4	Fetch.AI

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	Google Developer Student Club (GDSC)	Gen AI Study Jam 2024	National	17/10/2024
2	Google Developer Student Club (GDSC)	Diploma KickStart Event	National	09/11/2024
3	Google Developer Student Club (GDSC)	Encryptmania	Institute	11/11/2024
4	Google Developer Student Club (GDSC)	CodeCraze 2.O	National	26/02/2025
5	Google Developer Student Club (GDSC)	Solutions Challenge	National	04/03/2025
6	Google Developer Student Club (GDSC)	Hackathon Hustle	National	19/04/2025
7	Club Data Polaris & Skillbhavan	Squid Maze	National	27/02/2025
8	Club Data Polaris	ML Model Deployment	National	11/09/2024
9	Skillbhavan	30 Days 30 Python Projects	National	08/04/2025

(CAYm2) 2023-24

S.No	Name of the Professional Societies/Bodies, Chapters, Clubs	Name of the Event	National/International level	Date of Event (DD/MM/YYYY)
1	Google Developer Student Club (GDSC)	Google Cloud Study Jam	National	21/08/2023
2	Google Developer Student Club (GDSC)	Googlars- 7days Bootcamp	National	21/09/2023
3	Google Developer Student Club (GDSC)	Git-Github	National	25/09/2023
4	Google Developer Student Club (GDSC) & Ftech.AI	CodeCraze	National	16/02/2024
5	Skillbhavan	Maestro Meetup	Department	14/10/2024
6	Club Data Polaris	Skillsprint Bootcamp	National	16/10/2023
7	Club Data Polaris	Stranger Code	National	17/01/2024

(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	Club Data Polaris	ML Championship Hackathon	National	05/12/2022

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	GAURAV AJIT PATIL	SPARK 2k25	National	16/04/2025	Participated
2	SAMIKSHA SHEKHAR KHARCHE	Internship-Celebal Technologies	National	03/06/2025	Participated
3	KANCHAN SUNIL PATIL	Japnese Test	International	06/06/2025	Qualified
4	PARAGI VILAS PATIL	Sawit.ai learnathon	National	21/09/2024	Participated
5	PRANIL SANJAY PAWAR	IDE Bootcamp	National	21/02/2025	Participated
6	VIVEK SHASHIKANT CHAUDHARI	Hackethon	National	27/02/2025	Participated
7	BORASE VAISHNAVI SUNIL	Season 10 : AI Agents	National	12/06/2025	Participated
8	PATIL DHIRAJ SURESH	Internal Hackathon	National	14/02/2025	Participated
9	DESHMUKH OM PRASHANT	Internal Hackathon	National	14/02/2025	Participated
10	PATIL ATHARV MAHENDRA	Internal Hackathon	National	14/02/2025	Participated
11	CHOPADE PRANAV ANANT	Internal Hackathon	National	14/02/2025	Participated

(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	CHAVHAN DHANSHRI PRAKASH	Avishkar 2024	State	26/11/2023	Participated
2	CHAUDHARI KUNAL BHARAT	Avishkar 2024	State	26/11/2023	Participated
3	BORSE GAURAV BHOJRAJ	Avishkar 2024	State	26/11/2023	Participated
4	BHOSALE SUDARSHAN WALMIK	Avishkar 2024	State	26/11/2023	Participated
5	DESALE HARSHVARDHAN RAMESH	Maharashtra Student Innovation Challenge	State	26/01/2024	Participated
6	DEORE ANANT NANA	Maharashtra Student Innovation Challenge	State	26/01/2024	Participated
7	MAHAJAN HARSHAL JAGDISH	Margdarshak Event	National	07/03/2024	Participated
8	GIRASE HARSHAJEET RANJITSING	Margdarshak Event	National	07/03/2024	Participated
9	SAKSHI RAJENDRA PATIL	IET Karmaveer Expo'24	National	05/04/2024	2nd 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	Nikita Dilip Girase	Virtual Internship	National	07/09/2022	Participated
2	Shinde Hrushikesh Patingrao	Online Quiz	National	05/09/2022	Participated
3	Patil Vijay Satish	Online Quiz	National	22/07/2022	Participated
4	Mohit Bharat Patil	Online Quiz	National	22/07/2022	Participated
5	Yash Vijay Borse	Understanding Artificial Intelligence	National	23/08/2022	Participated
6	Yash Vijay Borse	MAANG Companies look fir in Tech Hires	National	11/08/2022	Participated
7	DEVARE DIKSHA JAGDISH	Internship	National	04/07/2022	Participated
8	Sachin Bhaskar Patil	Machine Hack	National	23/12/2022	Participated
9	DEVARE DIKSHA JAGDISH	MSBTE projectcompetition	State	25/03/2023	2nd prize
10	Prachi Pardeshi	Chess Championship	State	17/12/2022	Participated
11	Sachin Vinayak Dabhade, Ashwini Avinash Patil, Shivam Kishorilal Yog	Smart India Hackathon	National	25/08/2022	Runner up
12	Adil Bhikan Khatik & Manyar Abuzar Jamil	AVISHKAR	Zonal	10/12/2022	Silver Medal
13	Gaurav Patil	Badminton Championship	District	09/12/2022	Runner up

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	Newsletter- DARPAN	Prof. Atul Deelip Mairale	Mr. Uday Bhartiya	7	1	Soft Copy
2	Newsletter- DARPAN	Prof. Atul Deelip Mairale	Ms. Riya Deshmukh	4	1	Soft Copy
3	Magazine- MANTHAN	Prof. Manisha Shantaram Patil	Mr. Sarthak Patil	6	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	Newsletter- DARPAN	Prof. Manisha Shantaram Patil	Mr. Uday Bhartiya	5	1	Soft Copy
2	Newsletter- DARPAN	Prof. Manisha Shantaram Patil	Ms. Riya Deshmukh	2	1	Soft Copy
3	Magazine- MANTHAN	Prof. Atul Deelip Mairale	Mr. Tejas Chaudhari	6	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	Newsletter- DARPAN	Prof. Manisha Shantaram Patil	Mr. Uday Bhartiya	3	1	Soft Copy
2	Newsletter- DARPAN	Prof. Manisha Shantaram Patil	Mr. Jayesh Chaudhari	4	1	Soft Copy
3	Magazine- MANTHAN	Prof. Atul Deelip Mairale	Mr. Vishal Bhalkar	4	1	Soft Copy

4.7.4 Student Publications (5)

Institute Marks : 5.00

Table No. 4.7.4.1: List of student publications.**(CAYm1) 2024-25**

S.No	Name of the Student	Semester	Name of the Publisher	Name of the Journal/ Conference, etc.	Volume No.	Issue No.	Name of the Award if any
1	Bhartiya Uday Dineshkumar, Harshita Radheshyam Patil, Patil Mayur Gajanan	8	HBRP Publication Pvt. Ltd	Research & Reviews : Journal of Internet & Networking	1	2	-
2	Sumit Nandu More, Harshajeet Ranjitsing Girase, Harshal Jagdish Mahajan, Kiran Dilip Patkari	8	ICRAEST-2025 proceedings	ICRAEST-2025	3	5	Third Prize
3	Dipak Rajendra Patil, Gunjan Chandrakant Warke, Gaurav Jitendra Patil, More Mohit Mangolal	8	IJRASET Research and Development Corp	International Journal for Research in Applied Science & Engineering Technology (IJRASET)	13	5	-
4	Vedant Rajesh Ugale, Hrushikesh Patingrao Shinde, Vivek Namdev Bhoi, Ashutosh Dharmendra Pawar	8	IJRASET Research and Development Corp	International Journal for Research in Applied Science & Engineering Technology (IJRASET)	13	5	-
5	Patil Saurav Ratilal, Patil Himanshu Jagannath, Chaudhari Chetan Vijay, Dhiraj Shantilal Gosavi	8	HBRP Publication Pvt. Ltd	Journal of Advanced Research in Artificial Intelligence & It's Applications	2	2	-
6	Shirsath Rohan Gulab, Shinde Uday Vilas, Patil Vijay Satish	8	Genesis Global Publication	International Journal of Research Publication and Reviews	6	5	-
7	Mahima Chatur Masule, Mayuri Ashok Rajale, Gayatri Shirish Khairnar, Vrushali Gokul Patil	8	NA	Multidisciplinary Research for Sustainable Solutions (MRSS-2025)	0	0	Second Prize

(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	Himanshu Kishor Salunke, Neha Sachendra Chaudhari, Payal Narayan Patil, Pranjali Pravin Patil	8	IJS DR (IJ Publication)	International Journal of Scientific DEvelopment and Research	9	6	-
2	Shruti Laxmikant Pathak, Vaibhavi Jitendrasing Raul, Deep Vikas Bhandari, Pushpak Shantilal Desale	8	IJPUBLICATION (or IJ Publication)	Journal of Emerging Technologies and Innovative Research	11	5	-
3	Mohit Kishor Vasule, Mukesh Sharad Patil, Lalit Gulab Sangore, Akshay Bhalerao Pawar	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	6	-
4	Gaurav Manohar Patil, Shubham Chhotulal Patil, Kunal Dnyaneshwar Patil, Kalpesh Dilip Bhoi	8	IJPUBLICATION (or IJ Publication)	Journal of Emerging Technologies and Innovative Research (JETIR)	11	6	-
5	Deshmukh Yash Rajendra, Patil Jayesh Dnyaneshwar, Pardeshi Prachi Vijaysing, Pawar Prafulla Ravindra	8	IRE Journals	Iconic Research and Engineering Journal	2	9	-
6	Adil Bhikan Khatik, Abuzar Jamil Manyar, Puja Prabhakar Borse, Komal Nimba Mali	8	IRE Journals	ICONIC RESEARCH AND ENGINEERING JOURNALS (IRE)	7	12	-
7	Anant Rajendra Baviskar, Yash Satish Badgujar, Piyush Rajendra patil, Kunal rajkapur mali	8	IJSRET	International Journal of Scientific research & Engineering Trends	10	3	-
8	Shivam Kishorilal Yogi, Vedant Thakur, Dipak Chandrakant Mali, Shruti Uday Nhalvalde	8	IJPUBLICATION (or IJ Publication)	Journal of Emerging Technologies and Innovative Research (JETIR)	11	5	-
9	Jhalak Sanjay Maheshwari, Vedant Mahesh Chaudhari, Anuj Mohan Gujarathi, Nayan Chhotu Rathod	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	6	-
10	Yash Vijay Borse, Amol Sanjay mahale, Swapnil Chhotu More	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	6	-
11	Chetan Sanjay Jadhav, Vinayak Rajendra Marathe, Vishal Ravindra Patil, Sachin Vinayak Dabhade	8	Genesis Global Publication	International Journal of Research Publication and Reviews	5	6	-
12	Pratibha Prabhakar Koli, Pranjali Mahendra Chaudhari, Harshada Sanjay Mali, Sumit Premraj Pawar	8	IRE Journals	ICONIC RESEARCH AND ENGINEERING JOURNALS	7	11	-

(CAYm3) 2022-23

S.No	Name of the Student	Semester	Name of the Publisher	Name of the Journal/ Conference, etc.	Volume No.	Issue No.	Name of the Award if any
1	-	0	-	-	0	0	-

5 FACULTY INFORMATION (100)

Total Marks 68.72

Sr.No	Name of the Faculty	PAN No.	APAAR faculty ID*(if any)	Highest degree	University	Area of Specialization	Date of Joining in this Institution	Experience in years in current institute	Designation at Time Joining in this Institution	Present Designation	The date on which Designated as Professor/ Associate Professor if any	Nature of Association (Regular/ Contract/ Ad hoc)	Currently Associated (Y/N)	In case of NO, Date of Leaving	IS HOD?
1	Dr. Sheetal Prashant Patil	ANXPP7892B	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	24/12/2007	18	Assistant Professor	Associate Professor	01/07/2025	Regular	Yes		
2	Dr. Pankaj Valmik Baviskar	AMTPB0878Q	NA	M.Tech and Ph.D.	Medicaps University, Indore	Artificial Intelligence	17/06/2025	0.6	Associate Professor	Associate Professor	17/06/2025	Regular	Yes		
3	Dr. Nitin Girdhar Shinde	BLPPS0003J	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Artificial Intelligence	17/06/2025	0.6	Associate Professor	Associate Professor	17/06/2025	Regular	Yes		
4	Mr. Nilesh Arun Patil	BNNPP4223R	NA	M.Tech	Narsee Monjee Institute of Management Studies, Mumbai	Artificial Intelligence	17/06/2025	0.6	Assistant Professor	Assistant Professor		Regular	Yes		
5	Mr. Vasishth Vinayak Katre	DHTPK7423J	NA	M.Tech	Government College of Engineering, Amravati	Computer Science & Engineering	21/07/2022	3.6	Assistant Professor	Assistant Professor		Regular	Yes		
6	Mr. Tushant Anilrao Tayde	AXDPT6887G	NA	M.Tech	Government College of Engineering, Amravati	Computer Science & Engineering	04/08/2023	2.5	Assistant Professor	Assistant Professor		Regular	Yes		
7	Mr. Nilesh Ravindra Chaudhari	BUWPC2783B	NA	M.Tech	Dr. Babasaheb Ambedkar Technological University, Lonere - Raigad, Maharashtra	Computer Engineering	01/08/2024	1.5	Assistant Professor	Assistant Professor		Regular	Yes		
8	Mr. Shankar Laxman Tambe	AKIPT0178L	NA	M.Tech	Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal	Computer Science & Engineering	01/02/2025	0.11	Assistant Professor	Assistant Professor		Regular	Yes		
9	Mrs. Kaminee Subhash Patil	CFAPP9620J	NA	M.E.	North Maharashtra University, Jalgaon	Computer Science & Engineering	03/03/2025	0.10	Assistant Professor	Assistant Professor		Regular	Yes		

10	Ms. Amerah Bano Zameer Ahmed Ansari	AWVPA4225C	NA	M.E.	North Maharashtra University, Jalgaon	Computer Science & Engineering	01/04/2023	2.9	Assistant Professor	Assistant Professor		Regular	Yes		
11	Ms. Shraddha Rajendra Shah	GAVPS4198J	NA	M.E.	North Maharashtra University, Jalgaon	Computer Science & Engineering	01/08/2022	2.9	Assistant Professor	Assistant Professor		Regular	No	02/05/2025	
12	Mr. Yogesh Landge	AQSPL5651L	NA	M.E.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Science & Engineering	01/06/2024	1.3	Assistant Professor	Assistant Professor		Regular	No	26/09/2025	
13	Mr. Ganesh Nandkumar Chaudhari	AREPC7767K	NA	M.E.	North Maharashtra University, Jalgaon	Computer Engineering	17/08/2023	0.10	Assistant Professor	Assistant Professor		Regular	No	06/07/2024	
14	Mrs. Minakshi Hansraj Savant	FQYPP5302K	NA	M.E.	Gujarat Technological University, Ahmedabad	Information Technology	14/07/2025	0.6	Assistant Professor	Assistant Professor		Regular	Yes		No
15	Mr. Ganesh Nandkumar Chaudhari	AREPC7767K	NA	M.E.	North Maharashtra University, Jalgaon	Computer Engineering	14/07/2025	0.6	Assistant Professor	Assistant Professor		Regular	Yes		No
16	Ms. Shraddha Rajendra Mundada	BINPM3924P	NA	M.Tech	Dr. Babasaheb Ambedkar Technological University, Lonere - Raigad, Maharashtra	Computer Engineering	20/08/2025	0.4	Assistant Professor	Assistant Professor		Regular	Yes		No
17	Ms. Yogita Vikram Singh Solanki	NKCPS6862R	NA	M.Tech	Rajiv Gandhi Proudlyogiki Vishwavidyalaya, Bhopal	Computer Science & Engineering	01/08/2025	0.5	Assistant Professor	Assistant Professor		Regular	Yes		No
18	Mr. Nitish Jagdish Patidar	CDFPP9268P	NA	M.Tech	Rajiv Gandhi Proudlyogiki Vishwavidyalaya, Bhopal	Computer Science & Engineering	28/08/2025	0.4	Assistant Professor	Assistant Professor		Regular	Yes		No
19	Mr. Sagar Gorakh Patil	AYPPP2709N	NA	MS	Dublin Business School, Ireland	Data Analytics	28/08/2025	0.4	Assistant Professor	Assistant Professor		Regular	Yes		No
20	Ms. Megha Ravindra Sisode	DOGPS0324G	NA	M.E.	North Maharashtra University, Jalgaon	Computer Engineering	20/08/2025	0.4	Assistant Professor	Assistant Professor		Regular	Yes		No

21	Mr. Rahul Sakharam Ishi	ACLPI7016H	NA	M.Tech	Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal	Computer Science & Engineering	11/08/2025	0.5	Assistant Professor	Assistant Professor		Regular	Yes		No
22	Ms. Pooja Balaram Limbola	AUGPL3525K	NA	M.Tech	Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal	Computer Science & Engineering	20/08/2025	0.4	Assistant Professor	Assistant Professor		Regular	Yes		No
23	Dr. Rajnikant Bhagwan Wagh	AAUPW5793Q	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	01/07/2005	20.6	Assistant Professor	Professor	01/08/2020	Regular	Yes		Yes
24	Dr. Jayantrao Bhaurao Patil	AALPP9658A	NA	M.Tech and Ph.D.	North Maharashtra University, Jalgaon	Computer Engineering	18/07/2001	24.6	Professor	Professor	18/07/2001	Regular	Yes		No
25	Dr. Manoj Sakharam Ishi	ABUPI5885J	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	23/07/2010	15.5	Assistant Professor	Professor	01/07/2024	Regular	Yes		No
26	Dr. Sandip Ravindra Sonawane	BHNPS8920A	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	15/07/2006	19.6	Assistant Professor	Associate Professor	01/07/2014	Regular	Yes		No
27	Dr. Shailendra Madansing Pardeshi	APBPP3814M	NA	M.Tech and Ph.D.	Oriental University Indore	Computer Science and Engineering	15/07/2006	19.6	Assistant Professor	Associate Professor	01/07/2014	Regular	Yes		No
28	Dr. Vipul Devendra Punjabi	BBZPP4898N	NA	M.Tech and Ph.D.	Oriental University Indore	Computer Science and Engineering	15/01/2009	17	Assistant Professor	Associate Professor	01/07/2014	Regular	Yes		No
29	Dr. Sudarshan Subhashrao Sonawane	AXWPS8289G	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	21/10/2021	4.2	Assistant Professor	Associate Professor	01/07/2023	Regular	Yes		No
30	Dr. Puja Dipak Saraf	BTTPS6753B	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	19/01/2009	16.11	Assistant Professor	Associate Professor	01/07/2025	Regular	Yes		No

31	Dr. Pankaj Rambhau Patil	BGIPP5430N	NA	M.E. and Ph.D.	Amity University Maharashtra	Computer Science and Engineering	12/07/2010	15.6	Assistant Professor	Associate Professor	01/07/2016	Regular	Yes		No
32	Dr. Mohammadali Muzffarali Saiyyad	CZTPS5536D	NA	M.E. and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	02/01/2012	14	Assistant Professor	Associate Professor	02/07/2018	Regular	Yes		No
33	Dr. Pradip Kailas Patil	BFKPP9788L	NA	M.Tech and Ph.D.	Amity University Jaipur Rajasthan	Artificial Intelligence	17/06/2025	0.6	Associate Professor	Associate Professor	17/06/2025	Regular	Yes		No
34	Dr. Vandana Mohan Patil	AORPP1698C	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	15/12/2004	19.5	Assistant Professor	Associate Professor	01/06/2022	Regular	No	31/05/2024	No
35	Mr. Mahesh Madhukar Mahajan	BEGPM5205Q	NA	M.Tech	Rajiv Gandhi Proudयोगiki Vishwavidyalaya Bhopal	Computer Science & Engineering	26/07/2010	15.5	Assistant Professor	Assistant Professor		Regular	Yes		No
36	Ms. Punam Ravan Patil	BTNPP8016L	NA	M.Tech	Rajiv Gandhi Proudयोगiki Vishwavidyalaya Bhopal	Computer Science & Engineering	22/07/2011	14.5	Assistant Professor	Assistant Professor		Regular	Yes		No
37	Mr. Mayur Jagdish Patil	BGHPP1877L	NA	M.E.	North Maharashtra University, Jalgaon	Computer Science & Engineering	01/02/2020	5.11	Assistant Professor	Assistant Professor		Regular	Yes		No
38	Mr. Sagar Uttamrao More	BNNPM4658M	NA	M.Tech	SVKM's MPSTME, NMIMS	Computer Engineering	21/10/2021	4.2	Assistant Professor	Assistant Professor		Regular	Yes		No
39	Mr. Vishal Sharad Thakare	AFPT5338G	NA	M.E.	North Maharashtra University, Jalgaon	Computer Engineering	01/08/2022	3.5	Assistant Professor	Assistant Professor		Regular	Yes		No
40	Ms. Jayshri Suresh Sonawane	BYUPS5937B	NA	M.E.	North Maharashtra University, Jalgaon	Computer Engineering	01/08/2022	3.5	Assistant Professor	Assistant Professor		Regular	Yes		No
41	Mrs. Sapana Bhushan Raghuvanshi	CAPPR0832L	NA	M.E.	North Maharashtra University, Jalgaon	Computer Engineering	01/08/2022	3.5	Assistant Professor	Assistant Professor		Regular	Yes		No
42	Ms. Pallavi Arun Agrawal	AVFPA1912R	NA	M.E.	Sant Gadgebaba Amravati University	Computer Science & Engineering	01/08/2022	3.5	Assistant Professor	Assistant Professor		Regular	Yes		No

43	Mrs.Karishma Tushar Borse	CLBPP6378J	NA	M.E.	Savitribai Phule Pune University	Computer Engineering	29/08/2022	3.4	Assistant Professor	Assistant Professor		Regular	Yes		No
44	Mr. Manohar Bhika Patil	BUQPP7044A	NA	M.E.	North Maharashtra University, Jalgaon	Computer Science and Engineering	06/04/2022	3.9	Assistant Professor	Assistant Professor		Regular	Yes		No
45	Mrs. Pooja Niraj Bhandari	BYBPM3949Q	NA	M.Tech	Dr.Babasaheb Ambedkar Technological University Lonere	Computer Engineering	01/08/2022	3.5	Assistant Professor	Assistant Professor		Regular	Yes		No
46	Mr. Atul Shirram Chaudhari	AJFPC5730R	NA	M.E.	North Maharashtra University, Jalgaon	Computer Science & Engineering	23/01/2024	1.11	Assistant Professor	Assistant Professor		Regular	Yes		No
47	Mr. Harshal Shirram Patil	BGZPP0599R	NA	M.Tech	Rajiv Gandhi Proudयोगी Vishwavidyalaya Bhopal	Computer Science & Engineering	09/01/2023	3	Assistant Professor	Assistant Professor		Regular	Yes		No
48	Mrs. Gayatri Bhushan Patil	ELTPP6299E	NA	M.E.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Science and Engineering	06/04/2022	3.9	Assistant Professor	Assistant Professor		Regular	Yes		No
49	Ms. Pramila Kailas Ahire	AVXPA0880A	NA	M.E.	North Maharashtra University, Jalgaon	Computer Science & Engineering	06/04/2022	3.9	Assistant Professor	Assistant Professor		Regular	Yes		No
50	Mr. Mahesh Ravindra Dhakad	AUNPD6604Q	NA	M.Tech	Dr.APJ Abdul Kalam University Indore	Computer Science & Engineering	01/08/2025	0.5	Assistant Professor	Assistant Professor		Regular	Yes		No
51	Dr. Makarand Lotan Mali	AZHPM5414E	NA	M.E. and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	16/01/2010	15.11	Assistant Professor	Assistant Professor		Regular	No	31/12/2025	No
52	Mr. Dushyant Somnath Potdar	BRBPP2401H	NA	M.E.	North Maharashtra University, Jalgaon	Computer Engineering	06/04/2022	3.7	Assistant Professor	Assistant Professor		Regular	No	04/12/2025	No
53	Mrs. Swati Bhushan Patil	GGKPP8030F	NA	M.E.	North Maharashtra University, Jalgaon	Computer Science & Engineering	09/01/2023	2.4	Assistant Professor	Assistant Professor		Regular	No	09/06/2025	No

54	Mrs. Swati Bhushan Patil	GGKPP8030F	NA	M.E.	North Maharashtra University, Jalgaon	Computer Science & Engineering	10/06/2025	0.7	Assistant Professor	Assistant Professor		Regular	Yes		No
55	Dr. Nitin Namdeo Patil	ALYPP0715E	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	16/07/2005	18.11	Assistant Professor	Professor	01/07/2020	Regular	No	06/07/2024	No
56	Dr. Dharmaraj Rajaram Patil	ANUPP6762H	NA	M.E. and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	30/05/2006	18	Assistant Professor	Professor	01/07/2020	Regular	No	31/05/2024	No
57	Dr. Dharmaraj Rajaram Patil	ANUPP6762H	NA	M.E. and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	01/06/2024	1.7	Professor	Professor	01/06/2024	Regular	Yes		No
58	Mr. Swapnil Hiralal Chaudhari	APGPC6091Q	NA	M.E.	North Maharashtra University, Jalgaon	Computer Engineering	06/04/2022	2.1	Assistant Professor	Assistant Professor		Regular	No	31/05/2024	No
59	Dr. Vandana Mohan Patil	AORPP1698C	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	31/05/2025	0.7	Associate Professor	Associate Professor	31/05/2025	Regular	Yes		No
60	Dr. Vandana Mohan Patil	AORPP1698C	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	01/06/2024	0.11	Associate Professor	Associate Professor	01/06/2024	Regular	No	30/05/2025	No
61	Dr. Ujwala Manoj Patil	ALBPP2073J	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	17/09/2002	23.4	Lecturer	Professor	01/07/2020	Regular	Yes		Yes
62	Dr. Priti Shivaji Sanjekar	DYAPS5083L	NA	M.E. and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	03/07/2009	16.6	Lecturer	Associate Professor	01/07/2022	Regular	Yes		No

63	Mr. Atul Deelip Mairale	AUKPM2139A	NA	M.Tech	Rajiv Gandhi Proud yogiki Vishwavidyalaya, Bhopal	Software Engineering	20/10/2021	4.2	Assistant Professor	Assistant Professor		Regular	Yes		No
64	Ms. Sunetra Prabhakar Salunkhe	DVXPS0845E	NA	M.E.	North Maharashtra University, Jalgaon	Computer Science & Engineering	22/10/2021	4.2	Assistant Professor	Assistant Professor		Regular	Yes		No
65	Dr. Manisha Shantaram Patil	ASXPP6808L	NA	M.E. and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Computer Engineering	30/07/2022	3.5	Assistant Professor	Associate Professor	01/07/2025	Regular	Yes		No
66	Mr. Ashish Kailas Patil	CCBPP2181G	NA	M.E.	North Maharashtra University, Jalgaon	Computer Engineering	09/04/2022	3.9	Assistant Professor	Assistant Professor		Regular	Yes		No
67	Mr. Santosh Kumar Bhandare	ARCPB9461B	NA	M.Tech	Rajiv Gandhi Proud yogiki Vishwavidyalaya, Bhopal	Computer Science & Engineering	09/01/2023	3	Assistant Professor	Assistant Professor		Regular	Yes		No
68	Mrs. Priyanka Devendra Lanjewar	ALOPL1627R	NA	M.E.	Sant Gadge Baba Amravati University, Amravati	Computer Science & Information Technology	13/09/2022	3.4	Assistant Professor	Assistant Professor		Regular	Yes		No
69	Mr. Sujitkumar Vasant Chaudhari	AQXPC0530G	NA	M.Tech	Rajiv Gandhi Proud yogiki Vishwavidyalaya, Bhopal	Information Technology	24/07/2023	2.5	Assistant Professor	Assistant Professor		Regular	Yes		No
70	Mrs. Tejal Rajesh Girase	DBKPG6377J	NA	M.Tech	Sri Satya Sai University of Technology and Medical Sciences, Sehore	Computer Science and Engineering	17/08/2023	2.5	Assistant Professor	Assistant Professor		Regular	Yes		No
71	Dr. Kiran Dinkar Chaudhari	AHQPC7918Q	NA	M.Tech and Ph.D.	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	Data Science	17/06/2025	0.6	Associate Professor	Associate Professor	17/06/2025	Regular	Yes		No
72	Mr. Juber Ahamad Mo Salim Khatik	BCXPK8571N	NA	M.Tech	Narsee Monjee Institute of Management Studies, Mumbai	Data Science	17/06/2025	0.6	Assistant Professor	Assistant Professor		Regular	Yes		No

73	Mr. Yogeshkumar Raghunath Pathak	AXIPP5727E	NA	M.Tech	Narsee Monjee Institute of Management Studies, Mumbai	Data Science	17/06/2025	0.6	Assistant Professor	Assistant Professor		Regular	Yes		No
74	Mr. Kailas Dhanraj Deore	AOZPD6782R	NA	M.Tech	Narsee Monjee Institute of Management Studies, Mumbai	Data Science	17/06/2025	0.6	Assistant Professor	Assistant Professor		Regular	Yes		No
75	Mr. Niraj Hari Kanot	AXJPK3328F	NA	M.Tech	Jawaharlal Nehru Technological University, Hyderabad	Computer Science Engineering	22/10/2021	2.7	Assistant Professor	Assistant Professor		Regular	No	31/05/2024	No

5.1 Student-Faculty Ratio (SFR) (30)

Total Marks 14.00

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):

Computer Science and Engineering (Data Science)						
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	60	6	60	6
3rd Year	60	6	60	6	60	6
4th Year	60	6	60	6	60	6
Sub-Total	240	24	180	18	180	18
Total	264		198		198	

Artificial Intelligence and Data Science						
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	0	0	0	0
3rd Year	0	0	0	0	0	0
4th Year	0	0	0	0	0	0
Sub-Total	120	12	0	0	0	0
Total	132		0		0	

Information Technology						
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	0	0	0	0
3rd Year	0	0	0	0	0	0
4th Year	0	0	0	0	0	0
Sub-Total	120	12	0	0	0	0
Total	132		0		0	

Artificial Intelligence and Machine Learning						
Year of Study	CAY		CAYm1		CAYm2	
	(2025-26)		(2024-25)		(2023-24)	
	Sanction Intake	Actual admitted through lateral entry students	Sanction Intake	Actual admitted through lateral entry students	Sanction Intake	Actual admitted through lateral entry students
2nd Year	60	6	60	6	60	6
3rd Year	60	6	60	6	60	6
4th Year	60	6	60	6	0	0
Sub-Total	180	18	180	18	120	12
Total	198		198		132	

Computer 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	180	18	180	18	180	18
3rd Year	180	18	180	18	180	18
4th Year	180	18	180	18	180	18
Sub-Total	540	54	540	54	540	54
Total	594		594		594	
Grand Total	1320		990		924	

PG

No. of PG Programs in the Department

Grand Total	<input type="text"/>	<input type="text"/>	<input type="text"/>
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SFR

No. of UG Programs in the Department

No. of PG Programs in the Department

Description	CAY(2025-26)	CAYm1 (2024-25)	CAYm2 (2023-24)
UG1.B	132	66	66
UG1.C	66	66	66
UG1.D	66	66	66
UG1: Computer Science and Engineering (Data Science)	264	198	198
UG2.B	132	0	0
UG2.C	0	0	0
UG2.D	0	0	0
UG2: Artificial Intelligence and Data Science	132	0	0
UG3.B	132	0	0
UG3.C	0	0	0
UG3.D	0	0	0
UG3: Information Technology	132	0	0
UG4.B	66	66	66
UG4.C	66	66	66
UG4.D	66	66	0
UG4: Artificial Intelligence and Machine Learning	198	198	132
UG5.B	198	198	198
UG5.C	198	198	198
UG5.D	198	198	198
UG5: Computer Engineering	594	594	594
DS=Total no. of students in all UG and PG programs in the Department	264	198	198
AS=Total no. of students of all UG and PG programs in allied departments	1056	792	726
S=Total no. of students in the Department (DS) and allied departments (AS)	S1= 1320	S2= 990	S3= 924
DF=Total no. of faculty members in the Department	14	10	11
AF= Total no. of faculty members in the allied Departments	49	37	37
F=Total no. of faculty members in the Department (DF) and allied Departments (AF)	F1= 63	F2= 47	F3= 48
FF=The faculty members in F who have a 100% teaching load in the first-year courses	6	4	4
Student Faculty Ratio (SFR)=S/(F-FF)	SFR1= 23.16	SFR2= 23.02	SFR3= 21.00
Average SFR for 3 years	SFR= 22.39		

Average SFR for three assessment years : 22.39

Assessment SFR : 14

5.2 Faculty Qualification (25)

Total Marks 13.72

Institute Marks : 13.72

Year	X	Y	RF	FQ = 2.5 x [(10X + 4Y) / RF]]
2025-26(CAY)	20	43	59.00	15.76
2024-25(CAYm1)	8	39	49.00	12.04
2023-24(CAYm2)	9	39	46.00	13.37

Average Assessment : 13.72

5.3 Faculty Cadre Proportion (25)

Total Marks 23.00

Institute Marks : 23.00

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY(2025-26)	6.00	5.00	13.00	15.00	39.00	43.00
CAYm1(2024-25)	5.00	5.00	11.00	3.00	33.00	39.00
CAYm2(2023-24)	5.00	5.00	10.00	4.00	30.00	39.00
Average Numbers	5.33	5.00	11.33	7.33	34.00	40.33

Cadre Ratio Marks [(AF1 / RF1) + [(AF2 / RF2) * 0.6] + [(AF3 / RF3) * 0.4]] * 12.5 : 23.00

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. Lakhan Thakur	Manager Support Engineer	Cloud Software	Cloud Computing, Web Engineering, Mock Interview	51.00
2	Dr. Smita Mahajan	Assistant Professor	Symbiosis Institute of Technology, Pune	Project Stage-I, Semester Project-III	16.00

(CAYm2) 2023-24

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Naman Madharia	Senior Software developer	Qualys	Semester Project-I, Semester Project-III, Semester Project-II, Project Stage-I	52.00

(CAYm3) 2022-23

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Swapnil Bhadane	ETL Testing Lead	Tech Mahindra	Semester Project-I, Semester Project-III, Semester Project-II, Project Stage-I	52.00

5.5 Faculty Retention (10)

Total Marks 8.00

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).	49	46	39
AF=The no. of available faculty members in the Department including allied Departments	47	48	39
A= The no. of faculty members at the current institute with less than 1 year of experience (A in AF)	1	1	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)	4	0	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)	8	10	3
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)	14	14	13
E= The no. of faculty members at the current institute with more than 4 years of experience (E in AF)	20	23	23
FR= $((A*0) + (B*1) + (C*2) + (D*3) + (E*4)) / RF$ *2.50 (points limited to 10)	7	8	9

Average : 8.00

Assessment Marks : 8.00

6 FACULTY CONTRIBUTIONS (120)

Total Marks 95.00

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. Ujwala Manoj Patil	Indian Society for Technical Education (ISTE)-Lifetime	Member
2	Dr. Ujwala Manoj Patil	International Association of Engineers(IAENG)-Lifetime	Member
3	Dr. Priti Shivaji Sanjekar	Indian Society for Technical Education (ISTE)-Lifetime	Member
4	Mr. Atul Deelip Mairale	International Association of Engineers(IAENG)-Lifetime	Member
5	Mr. Atul Deelip Mairale	Computer Science Teachers Association (2023-24)	Member
6	Ms. Sunetra Prabhakar Salunkhe	Computer Science Teachers Association (2024-25)	Member
7	Ms. Sunetra Prabhakar Salunkhe	Computer Science Teachers Association (2023-24)	Member
8	Ms. Sunetra Prabhakar Salunkhe	Computer Science Teachers Association (2022-23)	Member
9	Ms. Manisha Shantaram Patil	Computer Science Teachers Association (2024-25)	Member
10	Ms. Manisha Shantaram Patil	Indian Society for Technical Education (ISTE)-Lifetime	Member
11	Ms. Manisha Shantaram Patil	International Association of Engineers(IAENG)-Lifetime	Member
12	Mr. Aashish Kailas Patil	Computer Science Teachers Association (2024-25)	Member
13	Mr. Aashish Kailas Patil	Computer Science Teachers Association (2023-24)	Member
14	Mr. Santosh Kumar Bhandare	Computer Science Teachers Association (2023-24)	Member
15	Mr. Santosh Kumar Bhandare	Institute for Educational Research and Publication (2024-25)	Member
16	Mr. Santosh Kumar Bhandare	International Association of Engineers(IAENG)-Lifetime	Member
17	Mrs. Priyanka Devendra Lanjewar	Computer Science Teachers Association (2023-24)	Member
18	Mrs. Priyanka Devendra Lanjewar	Institute for Educational Research and Publication(IFERP) (2024-25)	Member
19	Mrs. Priyanka Devendra Lanjewar	International Association of Engineers(IAENG)-Lifetime	Member
20	Mr. Sujit Vasant Chaudhari	International Association of Engineers(IAENG)-Lifetime	Member
21	Mrs. Tejal Rajesh Girase	Computer Science Teachers Association (2024-25)	Member

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. Ujwala Manoj Patil	FDP on Outcome Based Education: Tools for Computer Science	09/12/2024	Lucknow	Maharishi University of Information Technology, Lucknow (UP)
2	Dr. Priti Shivaji Sanjekar	Cyber Security & Ethical Hacking Safe Guard in Digital Infrastructure	09/09/2024	Raipur	MATS University, Raipur, (Chattisgarh)
3	Mr. Aashish Kailas Patil	FDP on Outcome Based Education: Tools for Computer Science	09/12/2024	Lucknow	Maharishi University of Information Technology, Lucknow (UP)
4	Mr. Santosh Kumar Bhandare	Integrating AI tools in Teaching Learning	26/08/2024	Nagpur	Suryodaya College of Engineering & Technology, Nagpur
5	Mrs. Priyanka Devendra Lanjewar	Cyber Security & Ethical Hacking Safe Guard in Digital Infrastructure	09/09/2024	Raipur	MATS University, Raipur, (Chattisgarh)
6	Dr. Ujwala Manoj Patil	One Day State Level Conference on "Multidisciplinary Research for Sustainable Solutions"(MRSS-2025)	18/01/2025	Shirpur	R.C.Patel Educational Trust's Institute of Management Research and Development, Shirpur, Dist- Dhule
7	Dr. Ujwala Manoj Patil	Two day workshop on "Capacity Building of Teachers"	18/03/2025	Shirpur	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon
8	Mr.Aashish Kailas Patil	One day Workshop on "Use of AI in Police Systems" (Organized Only for Police Department)	18/03/2025	Dhule	S. P. Office, Dhule

(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. Ujwala Manoj Patil	5 Days National Level FDP on Imparting OBE in Higher Education: Objectives, Best Practices & Measure	21/08/2023	Mumbai	ATLAS SkillTech University, Kurla West, Mumbai - 400070
2	Dr. Priti Shivaji Sanjekar	5 Days National Level FDP on Imparting OBE in Higher Education: Objectives, Best Practices & Measure	21/08/2023	Mumbai	ATLAS SkillTech University, Kurla West, Mumbai - 400070
3	Ms. Sunetra Prabhakar Salunkhe	Data Privacy, Governance & Compliance in Academia & Industry	18/03/2024	Raipur	MATS University, Raipur, (Chattisgarh)
4	Ms. Manisha Shantaram Patil	Data Privacy, Governance & Compliance in Academia & Industry	18/03/2024	Raipur	MATS University, Raipur, (Chattisgarh)

(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. Ujwala Manoj Patil	Artificial Intelligence & Machine Learning Applications in Education & Industry	13/02/2023	Raipur	MATS University, Raipur, (Chattisgarh)
2	Mr.Atul Deelip Mairale	Artificial Intelligence & Machine Learning Applications in Education & Industry	13/02/2023	Raipur	MATS University, Raipur, (Chattisgarh)
3	Ms. Sunetra Prabhakar Salunkhe	Reference Management in Research using Mendeley	16/01/2023	Dehradun	J B Institute of Technology (JBIT), Dehradun
4	Ms. Manisha Shantaram Patil	Reference Management in Research using Mendeley	16/01/2023	Dehradun	J B Institute of Technology (JBIT), Dehradun

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)
Dr. Ujwala Manoj Patil	5.00	5.00	5.00
Dr. Priti Shivaji Sanjekar	5.00	5.00	5.00
Mr. Atul Deelip Mairale	5.00	5.00	3.00
Ms. Sunetra Prabhakar Salunkhe	5.00	5.00	5.00
Ms. Manisha Shantaram Patil	5.00	5.00	5.00
Mr. Aashish Kailas Patil	5.00	5.00	5.00
Mr. Santosh Kumar Bhandare	5.00	5.00	0.00
Mrs. Priyanka Devendra Lanjewar	5.00	5.00	0.00
Mr. Sujit Vasant Chaudhari	5.00	5.00	0.00
Mrs. Tejal Rajesh Girase	5.00	5.00	0.00
Sum	50.00	50.00	28.00
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).	13.20	9.90	9.90
Assessment Points (AP)= (Sum/(0.5* RDF)) (Points limited to 5 for each assessment year)	5.00	5.00	5.00

Average assessment over 3 years: 5.00

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

Institute Marks : 5.00

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

S.No	Name of the Faculty	Name of the Course Developed and available online on Swayam platform by your Department faculty
1	Dr. Ujwala Manoj Patil	Department YouTube Link: https://youtube.com/@csedsrcpitshirpur?si=mpulxsHGJbO9MPBr Personal Website: https://sites.google.com/view/dr-ump/home
2	Dr. Priti Shivaji Sanjekar	Department YouTube Link: https://youtube.com/@csedsrcpitshirpur?si=mpulxsHGJbO9MPBr Personal Website: https://sites.google.com/view/drpritisa
3	Ms. Manisha Shantaram Patil	Department YouTube Link: https://youtube.com/@csedsrcpitshirpur?si=mpulxsHGJbO9MPBr Personal Website: https://sites.google.com/view/rcpit-msp
4	Ms. Sunetra Prabhakar Salunkhe	Department YouTube Link: https://youtube.com/@csedsrcpitshirpur?si=mpulxsHGJbO9MPBr Personal Website: https://sites.google.com/view/rcpit-sps
5	Mr. Sujit Vasant Chaudhari	Department YouTube Link: https://youtube.com/@csedsrcpitshirpur?si=mpulxsHGJbO9MPBr Personal Website: https://sites.google.com/view/rcpitsvc/
6	Mr. Aashish Kailas Patil	Department YouTube Link: https://youtube.com/@csedsrcpitshirpur?si=mpulxsHGJbO9MPBr Personal Website: https://sites.google.com/view/ashishpat
7	Mr. Santosh Kumar Bhandare	Department YouTube Link: https://youtube.com/@csedsrcpitshirpur?si=mpulxsHGJbO9MPBr Personal Website: https://sites.google.com/view/rcpit-skb
8	Mrs. Priyanka Devendra Lanjewar	Department YouTube Link: https://youtube.com/@csedsrcpitshirpur?si=mpulxsHGJbO9MPBr Personal Website: https://sites.google.com/view/rcpit-pdl
9	Mr. Atul Deelip Mairale	Department YouTube Link: https://youtube.com/@csedsrcpitshirpur?si=mpulxsHGJbO9MPBr Personal Website: https://sites.google.com/view/rcpitadm/
10	Mrs. Tejal Rajesh Girase	Department YouTube Link: https://youtube.com/@csedsrcpitshirpur?si=mpulxsHGJbO9MPBr Personal Website: https://sites.google.com/view/t-r-gira

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	Dr. Ujwala Manoj Patil	AI/ML for Geodata Analysis	ISRO	NA
2	Dr. Priti Shivaji Sanjekar	Fundamentals of Deep Learning	NVIDIA	NA
3	Ms. Manisha Shantaram Patil	Cloud Computing	NPTEL	65
4	Ms. Manisha Shantaram Patil	Distributed Systems	NPTEL	86
5	Mr. Santosh Kumar Bhandare	Learn JAVA	CodeChef	NA
6	Mrs. Priyanka Devendra Lanjewar	AI/ML for Geodata Analysis	ISRO	NA
7	Mrs. Priyanka Devendra Lanjewar	Learn JAVA	CodeChef	NA
8	Ms. Manisha Shantaram Patil	Introduction to the AWS Auto Scaling	AWS	NA
9	Ms. Manisha Shantaram Patil	NBA Process	NITTTTR	NA
10	Ms. Sunetra Prabhakar Salunkhe	Use of Artificial Intelligence in Technical Education	NITTTTR	NA
11	Dr. Priti Shivaji Sanjekar	Fundamentals of Visualization with Tableau	Coursera	NA
12	Ms. Sunetra Prabhakar Salunkhe	Building AI Applications with Watson APIs	Coursera	NA
13	Ms. Sunetra Prabhakar Salunkhe	Nearest Neighbor Collaborative Filtering	Coursera	NA
14	Ms. Manisha Shantaram Patil	AWS Academy Graduate - AWS Academy Cloud Foundations	AWS Academy	NA
15	Ms. Manisha Shantaram Patil	Tableau Training	Skillup	NA
16	Ms. Manisha Shantaram Patil	Machine Learning for Data Science using Python	NIT Warangal	NA
17	Mr. Atul Deelip Mairale	Python Basics	Coursera	NA
18	Mrs. Priyanka Devendra Lanjewar	Introduction to Machine Learning	NPTEL	51
19	Mr. Aashish Kailas Patil	Data Scientist	Simplilearn	NA
20	Mr. Aashish Kailas Patil	Python 101 for Data Science	IBM	NA
21	Mr. Sujit Vasant Chaudhari	Design Thinking for Beginners	Great Learning	NA

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	Multimodal AI and Foundation Models in Data Science	29/07/2024	5 Days	Dr. Joginder Singh Chavan, ,Dr. Ujwala Manoj Patil, ,Mr. Aashish Kailas Patil, Prof. Mohini Gawande	42
2	Edge to Cloud AI Architectures for Data Driven Systems	06/01/2025	5 Days	Mr. Sushil Rauthan, Ms. Manisha Shantaram Patil, Dr. Priti Shivaji Sanjekar, Prof. Jayashri Gorakh	31

(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	Next-Generation Data Science and Analytics	07/08/2023	5 Days	Mr. Shivam Pandey,Ms. Manisha Shantaram Patil, Ms. Sunetra Prabhakar Salunkhe,	37
2	From traditional ML to Generative AI: A Data Science Journey	29/01/2024	5 Days	Dr. Ujwala Manoj Patil, Dr. Priti Shivaji Sanjekar, Prof. Pradip Balbudhe	33

(CAYm3) 2022-23

S.No	Name of the Program	Date of the Program(DD/MM/YYYY)	Duration	Name of the Speaker & Designation and Organization	No. of People Attended
1	Emerging Trends in Data Science and Artificial Intelligence	22/08/2022	5 Days	Dr. Ujwala Manoj Patil, Dr. Priti Shivaji Sanjekar, Prof. Pradip Balbudhe	53
2	Advanced Machine Learning and Deep Learning for Data Science	17/01/2023	5 Days	Dr. Ujwala Manoj Patil,Dr. Priti Shivaji Sanjekar, Prof. Pravin Balbudhe	57

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	Mrs. Priyanka Devendra Lanjewar	Smart India Hackathon (Phase –II Institute Level)	03/09/2024	RCPIT Shirpur	https://sih.gov.in/sih2024
2	Ms. Sunetra Prabhakar Salunkhe	Smart India Hackathon (Phase –II Institute Level)	03/09/2024	RCPIT Shirpur	https://sih.gov.in/sih2024PS
3	Ms. Manisha Shantaram Patil	Smart India Hackathon (Phase –II Institute Level)	03/09/2024	RCPIT Shirpur	https://sih.gov.in/sih2024
4	Mr. Santosh Kumar Bhandare	Smart India Hackathon (Phase –II Institute Level)	03/09/2024	RCPIT Shirpur	https://sih.gov.in/sih2024
5	Mr. Sujit Vasant Chaudhari	Smart India Hackathon (Phase –II Institute Level)	03/09/2024	RCPIT Shirpur	https://sih.gov.in/sih2024

(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	Ms. Manisha Shantaram Patil	Smart India Hackathon (Phase –II Institute Level)	23-09-2023	RCPIT Shirpur	-
2	Mr. Atul Deelip Mairale	Smart India Hackathon (Phase –II Institute Level)	23-09-2023	RCPIT Shirpur	-

(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	Dr. Ujwala Manoj Patil	Smart India Hackathon	25/08/2022	Noida Institute of Engineering and Technology, Greater Noida	https://www.rcpit.ac.in/departamental-student-achievements-of-data-science
2	Mr. Atul Deelip Mairale	Avishkar (Zonal level) Humanities, Languages and Fine Arts - UG Category in Avishkar 2022	10/12/2022	SSVPS Bapusaheb Chaure COE, Dhule	https://www.rcpit.ac.in/departamental-student-achievements-of-data-science
3	Mr. Atul Deelip Mairale	Avishkar (University level) Humanities, Languages and Fine Arts - UG Category in Avishkar 2022	24/12/2022	Arvind Gavali COE, Satara	https://www.rcpit.ac.in/departamental-student-achievements-of-data-science
4	Mr. Atul Deelip Mairale	Sustainability Hackathon Challenge 2023	28/04/2023	Entrepreneurship Development Institute of India, Ahmedabad	-

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	Ms. Sunetra Prabhakar Salunkhe	Talentnext-Digital Skills Readiness Program	Wipro	15 Days	Faculty were recognized as Advanced Technology Certified Faculty (ATCF)
2	Mrs. Priyanka Devendra Lanjewar	AI-Powered Resume Screening & Recruitment Automation	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on NLP for text analysis
3	Mr. Sujit Vasant Chaudhari	AI-Powered Resume Screening & Recruitment Automation	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on NLP for text analysis
4	Mr. Santosh Kumar Bhandare	Blockchain-Based Secure Voting System	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on development Block chain security concepts
5	Ms. Manisha Shantaram Patil	Blockchain-Based Secure Voting System	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on development Block chain security concepts
6	rs. Priyanka Devendra Lanjewar	Cyber Suraksha course	Microsoft, TATA Strive	1 Day	Faculty made students aware of Cyber Suraksha
7	Mr. Atul Deelip Mairale	Faculty Development Adventure-Elevate Your Skills	Zensar,Pune	1 Day	Faculty Development
8	Mr. Aashish Kailas Patil	Faculty Development Adventure-Elevate Your Skills	Zensar,Pune	1 Day	Faculty Development
9	Mr. Santosh Kumar Bhandare	JAVA Full Stack	Wipro	15 Days	Faculty were recognized as Advanced Technology Certified Faculty (ATCF)
10	Mr. Santosh Kumar Bhandare	.NET Full Stack	Wipro	15 Days	Faculty were recognized as Advanced Technology Certified Faculty (ATCF)
11	Mr. Aashish Kailas Patil	Real-Time Face Recognition Attendance System	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on Image processing techniques
12	Ms. Manisha Shantaram Patil	Real-Time Face Recognition Attendance System	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on Image processing techniques
13	Mr. Atul Deelip Mairale	Cloud-Based Machine Learning Model Deployment Platform	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on ML model deployment
14	Mrs. Tejal Rajesh Girase	Cloud-Based Machine Learning Model Deployment Platform	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on ML model deployment
15	Dr. Priti Shivaji Sanjekar	Web Application Vulnerability Scanner	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on Web security principles
16	Mr. Atul Deelip Mairale	Web Application Vulnerability Scanner	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on Web security principles
17	Ms. Sunetra Prabhakar Salunkhe	Personal Finance Management Mobile Application	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on Mobile app UI/UX design
18	Mr. Aashish Kailas Patil	Personal Finance Management Mobile Application	iAriana Technologies Private Limited, Pune	15 Days	Faculty trained students on Mobile app UI/UX design
19	Ms. Manisha Shantaram Patil	Honeywell Student Empowering Program by IPS Academy	Honeywell in collaboration with IPS Academy	15 Days	Faculty were recognized as mentor
20	Mr. Aashish Kailas Patil	Data Science Capstone	Simplilearn	15 Days	Faculty Development
21	Mr. Aashish Kailas Patil	Python for Data Science	Simplilearn	15 Days	Faculty Development

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

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	1	1	1
2	No. of Ph.D. students graduated in the Department	0	0	0

6.2.3 Development Activities (10)

Institute Marks : 10.00

Table No.6.2.3.1: Patent Details

S.N.	Name of Authors	Title of Patent	Application No.	Granted/Publis hed
CAYm1 (2024-25)				
1.	Mr. Atul Deelip Mairale	Ai Based Solar Powered Banana Leaf Extractor	418581-001	Granted
2.	Mr. Sujit Vasant Chaudhari	Ai Based Solar Powered Banana Leaf Extractor	418581-001	Granted
CAYm2 (2023-24)				
1.	Ms. Manisha Shantaram Patil	Sleeper Grab Device	401269-001	Granted
2.	Ms. Sunetra Prabhakar Salunkhe	Sleeper Grab Device	401269-001	Granted

Table No.6.2.3.2: Copyright Details

S.N.	Name of the Applicant	Title of Copyright	Diary Number	Registration number
CAYm1 (2024-25)				
1	Mr.Sachin Nana Pawar, Dr. Ujwala Manoj Patil, Manohar B. Patil, Mayur Jagdish Patil	Epic Journeys - One Stop Solution For Travellers	10268/2025-CO/SW	SW-2025020754
CAYm2 (2023-24)				
1	Yash Vinod Raghuvanshi, Mr. Aashish Kailas Patil, Mayur Avinash Suryawanshi, Lokesh Avinash Joshi, Jay Sharad Sonar	S. T. Bus Tracking App	33760/2023-CO/SW	SW-18210/2024

Table No.6.2.3.3: Working Models/Prototype Details

S.N.	Name of Working Models/Prototype	Name of Faculty	Domain
CAYm1 (2024-25)			

1.	Converges Live Leader Board System	Ms. Manisha Shantaram Patil	Web and Application Development
2.	COLLAX: Online Coding Interview Platform	Dr. Priti Shivaji Sanjekar	Web and Application Development
CAYm2 (2023-24)			
1.	Student Feedback System for RCPIT	Mr. Atul Deelip Mairale	Web and Application Development
2.	Realtime Financial Complaint Classification using Big Data Framework	Ms. Manisha Shantaram Patil	Data Science, Analytics and Machine Learning
CAYm3 (2022-23)			
1.	Intelligent Waste Management System	Dr. Priti Shivaji Sanjekar	Artificial Intelligence & Data Analytics

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. Ujwala Manoj Patil	Dr. Priti Shivaji Sanjekar	Computer Science & Engineering (Data Science)	CureConnect-Essential Build	Sudip Hospital, Shirpur	6 Months	0.30
Dr. Ujwala Manoj Patil	Dr. Priti Shivaji Sanjekar	Computer Science & Engineering (Data Science)	CureConnect-Enterprise Edition	Siddhivinayak Hospital, Shirpur	6 Months	0.37
Dr. Ujwala Manoj Patil	Dr. Priti Shivaji Sanjekar	Computer Science & Engineering (Data Science)	Website Development for Sumalti Multispeciality Hospital, Sakri	Sumalti Multispeciality Hospital, Sakri	6 Months	0.30
						Amount received (Rs.):0.97

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. Priti Shivaji Sanjekar	Dr. Ujwala Manoj Patil	Computer Science & Engineering (Data Science)	SikhoEasy Learning Platform	Techity, Hyderabad	1 Year	0.35
Dr. Ujwala Manoj Patil	Dr. Priti Shivaji Sanjekar	Computer Science & Engineering (Data Science)	Smart Grass Cutting Robot	Ahilya Lawns, Shirpur	6 Months	0.45
						Amount received (Rs.):0.80

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
-	-	-	-	-	-	0.00
						Amount received (Rs.):0.00

Total Amount (Lacs) Received for the Past 3 Years: 1.77

Note*:

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

6.2.5 Consultancy Work (15)

Institute Marks : 6

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.Jayantrao Bhaurao Patil	Dr. Ujwala Manoj Patil	Examination	Digital Platform Support for Smooth Conduction of MHT-CET Examination 2024–25 (PCB & PCM)	Assessinfra Technology Pvt. Ltd	20 Days	3.16
Dr.Jayantrao Bhaurao Patil	Dr. Ujwala Manoj Patil	Examination	Digital Platform Support for Smooth Conduction of MHT-CET Examination 2024–25 (BCA)	Assessinfra Technology Pvt. Ltd	1 Day	0.24
						Amount received (Rs.):3.40

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.Jayantrao Bhaurao Patil	Dr. Ujwala Manoj Patil	Examination	Digital Platform Support for Smooth Conduction of Examination	VM Info Tech	10 Days	1.59
Dr.Jayantrao Bhaurao Patil	Dr. Ujwala Manoj Patil	Examination	Digital Platform Support for Smooth Conduction of MHT CET Examination 2023-24	CET Cell	2 Days	0.15
						Amount received (Rs.):1.74

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
Dr.Jayantrao Bhaurao Patil	Dr. Ujwala Manoj Patil	Examination	Digital Platform Support for Smooth Conduction of NTA NEET	NTA NEET	10 Days	1.80
Dr.Jayantrao Bhaurao Patil	Dr. Ujwala Manoj Patil	Examination	Digital Platform Support for Smooth Conduction of NTA NEET	NTA NEET	10 Days	0.28
Dr.Jayantrao Bhaurao Patil	Dr. Ujwala Manoj Patil	Examination	Digital Platform Support for Smooth Conduction of Ven Sysco Infra Pvt. Ltd.	Ven Sysco Infra Pvt. Ltd.	10 Days	4.31
						Amount received (Rs.):6.39

Total amount (Lacs) received for the past 3 years: 11.53

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 : 1.00

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
Dr. Ujwala Manoj Patil	PrepCET	1 Year	0.60	0.50	Promoted Startup
Dr. Ujwala Manoj Patil	Smart AI Mock Interview Platform	1 Year	0.30	0.25	Research Work Published
Dr. Priti Shivaji Sanjekar	Blockchain Based Fake Product Identification	1 Year	0.71	0.25	Research Work Published
			Amount received (Rs.): 1.61		

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
Dr. Priti Shivaji Sanjekar	SONAR Rock vs Mine Prediction	1 Year	0.60	0.25	Research Work Published
			Amount received (Rs.): 0.60		

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
Dr. Ujwala Manoj Patil	Moving Vehicle Registration Plate Detection (SIH-2022)	6 Months	0.90	0.45	Team was selected in Final round of SIH at New Delhi
			Amount received (Rs.): 0.90		

Total amount (Lacs) received for the past 3 years : 3.11

6.2.6 B Amount utilized (2)

Institute Marks : 2.00

Total amount (Lacs) utilized in the past 3 years=1.7

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

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	CSE(Data Scie	23	System: Dell O	32 Hrs/Week	Mr.Umesh Daç	Lab Assistant	B.E. (Compute
2	CSE(Data Scie	23	System: HP Pr	32 Hrs/Week	Mr.Umesh Daç	Lab Assistant	B.E. (Compute
3	CSE(Data Scie	23	System: HP Pr	34 Hrs/Week	Mr.Manoj Pralh	Lab Assistant	B.E. (Compute
4	CSE(Data Scie	23	System: HP Pr	32 Hrs/Week	Mr.Manoj Pralh	Lab Assistant	B.E. (Compute
5	CSE(Data Scie	23	System: HP All	36 Hrs/Week	Mr.Baviskar Ne	Lab Assistant	B.E. (E&TC)
6	CSE(Data Scie	23	System: HP Pr	36 Hrs/Week	Mr.Baviskar Ne	Lab Assistant	B.E. (E&TC)

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

Total Marks 20.00

Sr. No	Name of the Facility	Details	Purpose for creating facility	Utilization	Relevance to POs/PSOs
1	AWS Academy	AWS Academy prepare students for industry-recognized certifications and careers in the cloud	AWS Academy facility is to provide structured industry-aligned cloud computing education and hands-on experience for students, To equip students with practical knowledge of cloud computing, including architecture, security, storage, databases, and machine learning using AWS services.	To provide access to real AWS environments, To prepare students for globally recognized AWS certifications	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO11, PO12; PSO2
2	Virtual Lab	The Virtual Labs project provides remote-access to simulation-based Labs in Computer Science and Engineering (Data Science)	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
3	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, PO5, PO12; PSO1, PSO2
4	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
5	Turnitin / Copyleaks Plagiarism Software	Turnitin / Copyleaks 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; PSO1, PSO2

6	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, PO12; PSO1, PSO2
7	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, PO12; PSO1, PSO2
8	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; PSO1, PSO2
9	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; PSO1, PSO2

7.3 Maintenance of laboratories and overall ambiance (10)

Total Marks 10.00

Maintenance Policy

The Computer Science and Engineering (Data Science) Department follows a clear and systematic maintenance policy to keep all laboratory System in good working condition. The main aim of the policy is to ensure safe and secure usage of System, prevent unexpected system failures and provide smooth conduct of practical sessions.

Regular inspection, cleaning, updating and performance testing of hardware and software resources are carried out throughout the academic year. 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 System and reporting any issues immediately. This policy helps in maintaining safety, reliability, data security and uninterrupted laboratory activities.

Corrective and 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 System failure. It includes visual inspection, cleaning of System and surroundings, checking all connections, verifying safety measures, testing System performance and carrying out minor repairs if required. All maintenance details are recorded in the log book before approving the System 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 System. 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 System is tested, records are updated and verification is done before restarting laboratory work. The corrective maintenance process is shown in Figure 7.3.2.

Overall Ambiance

The Computer Science and Engineering (Data Science) 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 laboratory sessions.

Safety instructions, Dos and Don'ts are clearly displayed in each laboratory. Fire safety System, first-aid box 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.

A comfortable temperature is maintained in every computer laboratory through properly installed and well maintained ventilation and air conditioning systems.

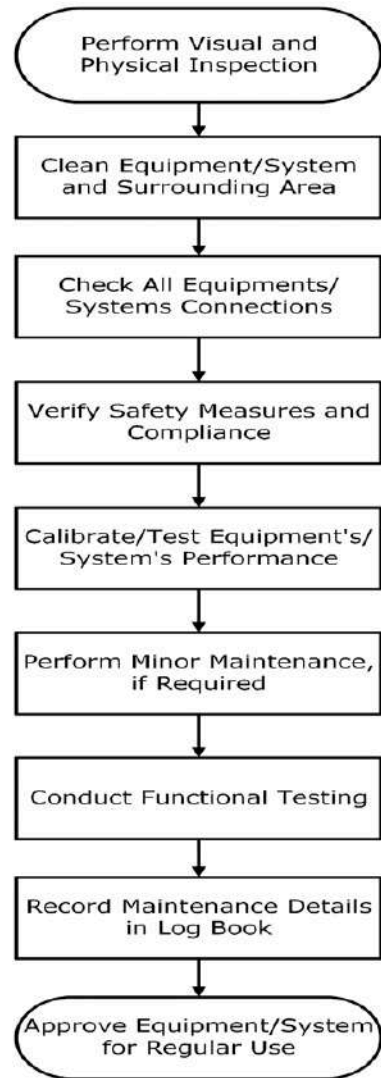


Figure 7.3.1 Preventive Maintenance Flowchart

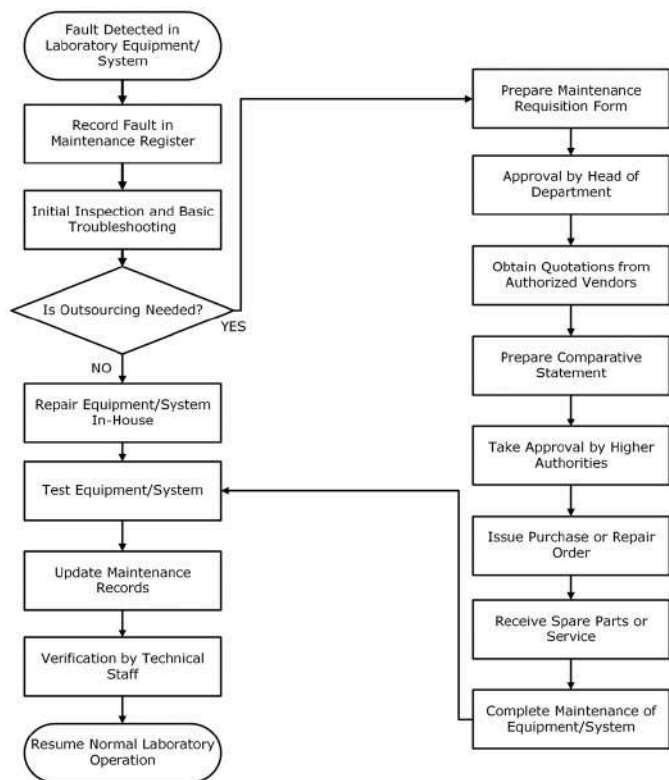


Figure 7.3.2 Corrective Maintenance Flowchart

Sr. No	Laboratory Name	Safety Measures
1	CSE(Data Science) Computer Lab 1	A. Basic safety measures: Do's and Don'ts. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
2	CSE(Data Science) Computer Lab 2	A. Basic safety measures: Do's and Don'ts. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
3	CSE(Data Science) Computer Lab 3	A. Basic safety measures: Do's and Don'ts. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
4	CSE(Data Science) Computer Lab 4	A. Basic safety measures: Do's and Don'ts. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
5	CSE(Data Science) Computer Lab 5	A. Basic safety measures: Do's and Don'ts. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
6	CSE(Data Science) Computer Lab 6	A. Basic safety measures: Do's and Don'ts. 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. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
8	Centre of Excellence (Computer Centre and Language Lab)	A. Basic safety measures: Do's and Don'ts. 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

Using the facilities available in the Project Laboratory / Centre of Excellence listed in Table 7.5.1, students will be able to undertake practical experiments, develop innovative and industry relevant projects, carry out advanced research and gain hands on experience with modern tools and technologies. These facilities enable students to apply theoretical knowledge to real world problems, enhance their analytical and problem solving skills, foster creativity and innovation and prepare them for higher studies, competitive research and professional careers. Additionally, the exposure to state-of-the-art equipment and collaborative work encourages teamwork, technical competence and an understanding of industry standards and best practices.

Table No. 7.5.1: List of Project Laboratory/Centre of Excellence.

S.N.	Name of the Laboratory
1.	<p>Project Laboratory</p> <p>The Computer Science and Engineering (Data Science) Department has well-established Project Laboratory that are readily accessible to students for carrying out academic projects (Semester Projects and Major Projects), research activities, internships, and innovative developments in the field of Data Science.</p> <p>These laboratories are equipped with adequate computing systems, programming environments and reliable internet connectivity to support project implementation and research oriented learning. The infrastructure enables students to work on real time datasets, machine learning models, statistical analysis, data visualization and Data Science based applications.</p> <p>Details of completed projects are documented in Section 2.2(D) of the Self-Assessment Report (SAR).</p> <p>Total Number of PC:20</p> <p>Configuration:</p> <p>HP ProOne All in One 600 G6, Core i5 10th Gen, Processor 2.30 GHz, 8GB RAM, 500GB HDD, 22".</p> <p>Utilization</p> <p>The Project Laboratory of the Department of CSE (Data Science) is effectively utilized by students and faculty for carrying out Semester Project, final-year major projects, internships and innovation driven activities. The laboratory supports all phases of project development, including problem identification, data collection, experimental analysis, modeling, simulation, software development, testing and validation. The laboratory equipped with computing systems and advanced tools such as LaTeX, Python, R, TensorFlow and Google Colab. These facilities enables students to develop data driven solutions and gain practical exposure aligned with industry and research requirements.</p> <p>Relevance to POS/PSOs: PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO11, PO12, PSO1, PSO2</p>

S.N.	Name of the Laboratory
	<p data-bbox="638 123 821 142">Centre of Excellence</p> <p data-bbox="638 159 1230 269">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.</p> <p data-bbox="638 285 1230 347">The Centre is supported with modern infrastructure, updated hardware platforms and required software tools to work in emerging and interdisciplinary domains</p> <p data-bbox="638 363 1230 522">The Centre of Excellence for Foreign Languages aims 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.</p> <p data-bbox="638 539 1230 717">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.</p> <p data-bbox="575 734 1230 889">2. Beyond problem-solving, the platform emphasizes hands-on project development using modern technologies such as MERN (MongoDB, Express.js, React and 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.</p> <p data-bbox="638 906 730 925">Utilization</p> <p data-bbox="638 941 1230 1052">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.</p> <p data-bbox="638 1068 1230 1179">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.</p> <p data-bbox="638 1195 1230 1305">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.</p> <p data-bbox="638 1321 1184 1367">Relevance to POS/PSOs: PO1, PO2, PO3, PO4, PO5, PO10, PO11, PSO1, PSO2</p>

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

Total Marks 40.00

The following are the areas of weaknesses in the program shown in Table 8.1.1.1 (analysis of evaluation of COs attainment levels along with the action taken)

Table No. 8.1.1.1 Analysis of Evaluation of COs Attainment Levels Along with the Action Taken

Area of Weakness	Observed Cause(s)	Corrective Action(s)	Responsible Unit
Fundamental Knowledge	- Weak foundation in applied sciences - Limited practice with numerical problem-solving	- Introduced bridge courses - Conducted remedial classes - Given Assignments and Question Banks - Conduction of Pre – requisite Test	Course Instructors
Analysis & Problem-Solving Skills	- Lack of exposure to open-ended design challenges	- Integrated case studies & real life projects - Organized open ended competitions - Coding contests like hackathon competitions	Department & Faculty
Communication & Teamwork	- Weak technical writing & presentation skills - Limited group project exposure	- Interdisciplinary Projects and Mock Interviews with experts - Introduced group assignments & peer evaluation	Faculty & Language Lab
Industry Readiness	- Insufficient internships & industrial visits - Lack of awareness of standards & sustainability	- Startups encouragement through IIC Cell - Invited industry experts for guest lectures - Embedded ethics & sustainability modules	Training & Placement Cell
Higher-Order Thinking & Innovation	- Limited exposure to research - Lack of project-based learning	- Encouraged participation in hackathons - Introduced research-oriented final year projects - Promote innovation clubs	Faculty & Research Cell

Batch 2021-2025

The comparison of target levels and CO attainment for all semesters shown in Table no 8.1.1.2

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

First Semester												
Subjects	C101T	C102T	C103T	C104T	C105T	C106L	C107L	C108L	C109L	C110L		AVG.
Target Level	1.35	1.35	1.35	1.35	1.35	2.25	2.25	2.25	2.25	2.25		1.80
Co Attainment	1.51	1.86	1.73	2.21	1.64	2.13	2.65	2.21	2.37	1.75		2.01
Actions : CO Attainment > Target Level												
Second Semester												

Subjects	C111T	C112T	C113T	C114T	C115T	C116T	C117L	C118L	C119L	C120 L			AVG.
Target Level	1.35	1.35	1.35	1.35	1.35	1.35	2.25	2.25	2.25	2.25			1.71
Co Attainment	1.49	1.64	1.77	1.72	1.75	2.18	2.29	2.03	1.63	2.74			1.92
Actions : CO Attainment > Target Level													
Third Semester													
Subjects	C201T	C202T	C203L	C204T	C205L	C206T	C207L	C208T	C209L	C210 L	C211 L		AVG.
Target Level	1.35	1.35	2.25	1.35	2.25	1.35	2.25	1.35	2.25	2.25	2.25		1.84
Co Attainment	2.52	1.71	2.59	2.12	2.97	1.68	2.91	1.70	2.65	2.89	2.92		2.42
Action: CO Attainment > Target Level													
Fourth Semester													
Subjects	C212T	C213L	C214T	C215L	C216T	C217L	C218T	C219L	C220T	C221 L	C222 L	C223 L	AVG.
Target Level	1.35	2.25	1.35	2.25	1.35	2.25	1.35	2.25	1.35	2.25	2.25	2.25	1.88
Co Attainment	1.74	2.83	2.42	2.78	1.41	2.76	1.59	2.11	2.59	2.88	2.93	1.34	2.28
Action: CO Attainment > Target Level													
Fifth Semester													
Subjects	C301T	C302L	C303T	C304L	C305T	C306L	C307L	C308T	C309T	C310 T	C311 L	C312 L	AVG.
Target Level	1.35	2.25	1.35	2.25	1.35	2.25	2.25	1.35	1.35	1.35	2.25	2.25	1.80
Co Attainment	2.72	2.56	2.52	2.75	2.61	2.86	2.95	2.60	2.96	2.16	2.95	1.66	2.61
Action: CO Attainment > Target Level													
Sixth Semester													
Subjects	C313T	C314L	C315T	C316L	C317T	C318L	C319L	C320T	C321L	C322 L			AVG.
Target Level	1.35	2.25	1.35	2.25	1.35	2.25	2.25	1.35	2.25	2.25			1.89
Co Attainment	1.93	1.14	2.38	2.80	2.40	2.95	2.97	2.72	2.66	2.87			2.48
Action: CO Attainment > Target Level													
Seventh Semester													
Subjects	C401T	C402L	C403T	C404L	C405L	C406T	C407L	C408T	C409L				AVG.
Target Level	1.35	2.25	1.35	2.25	2.25	1.35	2.25	1.35	2.25				1.85

Co Attainment	2.70	2.89	2.17	2.55	2.96	2.71	2.24	1.89	2.87			2.55
Action: CO Attainment > Target Level												
Eighth Semester												
Subjects	C410T	C411T	C412T	C413T	C414L							AVG.
Target Level	1.35	1.35	1.35	1.35	2.25							1.53
Co Attainment	2.66	2.66	2.71	2.83	2.95							2.76
Action: 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

2021-25 Batch

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

- For the POs mapping with more than 70% of courses the target is 1.7
- For the POs mapping with 50% to 70% courses the target is 1.6
- For the POs mapping with less than 50% courses the target is 1.5

PO Mapping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO Avg.
		2.08	1.61	1.50	1.67	1.49	2.11	1.62	2.04	1.42	1.33	1.28	1.30

Rubric for setting the Targets of PSO attainment based on the average mapping of program PSOs with the courses as:

- For the PSOs mapping with more than 70% of courses the target is 2.1
- For the PSOs mapping with 50% to 70% courses the target is 2.0
- For the PSOs mapping with less than 50% courses the target is 1.9

PSO Mapping	PSO1	PSO2	PSO Avg.
		1.65	2.28

Table No. 8.1.2.1 Result of Evaluation of the POs/PSOs Attainment

POs	Target Level	Attainment Level	Observations
PO1: Engineering Knowledge			
PO1	1.7	1.86	Target Achieved
Action 1: Bridge course and Pre-requisite test are conducted. Action 2: Use of virtual lab experiments and quiz to improve conceptual clarity. Action 3: Practice assignments on fundamental engineering topics was provided.			
PO2: Problem Analysis			
PO2	1.7	1.58	Target Not Achieved
Action 1: Analytical based teaching adopted. Action 2: Encourage students to participate in Moodle quizzes and problem-solving activities. Action 3: Remedial classes were conducted for slow learners.			
PO3: Design/Development of Solutions			
PO3	1.7	1.51	Target Not Achieved
Action 1: Expert 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 the prescribed curriculum were conducted to enhance students' practical knowledge. Action 4: Students were provided the access to NPTEL Videos. Action 5: Case studies on Design Thinking are conducted.			

PO4: Conduct Investigations of Complex Problems			
PO4	1.7	1.54	Target Not Achieved
<p>Action 1: Technical events were conducted for students to present projects.</p> <p>Action 2: Workshops were conducted for hands-on training on latest technologies.</p> <p>Action 3: Students were encouraged to undertake interdisciplinary projects involving concepts from multiple engineering domains to investigate complex engineering problems.</p>			
PO5: Modern Tool Usage			
PO5	1.7	1.54	Target Not Achieved
<p>Action 1: Individual systems were provided for students.</p> <p>Action 2: Expert sessions were conducted.</p> <p>Action 3: Virtual Labs and simulation tools were used to perform experiments and analyze engineering problems.</p> <p>Action 4: Expert lectures and technical sessions by industry professionals were organized to provide practical exposure to new technologies like Cloud, Hadoop.</p> <p>Action 5: 2 Day workshop on Usage of Git and Github is conducted.</p>			
PO6: The Engineer and Society			
PO6	1.5	1.81	Target Achieved
<p>Action 1: Organize seminars on intellectual property rights.</p> <p>Action 2: Incorporated projects addressing local community needs (water, waste management, traffic analysis etc.)</p> <p>Action 3: Encouraged students for participation in Avishkar, Hackathon, technical event and social outreach programs.</p> <p>Action 4: Expert lecture on cyber security was conducted to enhance students' awareness of data security and cyber threats.</p>			
PO7: Environment and Sustainability			
PO7	1.5	1.44	Target Not Achieved
<p>Action 1: Engaged students in projects aligned with SGDs such as waste quality monitoring and water conservation.</p> <p>Action 2: Special drives like Eco Friendly Ganesh Idol Immersion, Bird Feeders, and Tree Plantation, etc. are conducted.</p> <p>Action 3: Students are encouraged to participate in Avishkar, Hackathon, and technical event.</p> <p>Action 4: Hosted poster competition on Climate Change and Human Responsibility in 21st century.</p>			
PO8: Ethics			
PO8	1.5	1.90	Target Achieved

Action 1: A Seminar on Entrepreneurship Development.			
Action 2: Conducted ethics case studies for course on Universal Human Values.			
Action 3: Plagiarism checking tools were used to promote academic integrity and ethical research practices.			
PO9: Individual and Team Work			
PO9	1.6	1.54	Target Not Achieved
Action 1: A Seminar on Entrepreneurship Development.			
Action 2: Projects are conducted in groups with peer evaluation components.			
Action 3: Assign multidisciplinary projects involving collaboration across departments.			
Action 4: Encourage participation in student clubs and professional societies.			
Action 5: Recognize and reward effective teamwork in project evaluations.			
Action 6: Students participate in TA activities such as Mock Interview, Presentations, Group Discussion in groups and individually.			
PO10: Communication			
PO10	1.6	1.40	Target Not Achieved
Action 1: Seminar on Project-Based Learning.			
Action 2: Conduct technical writing workshops and report preparation training.			
Action 3: Include oral presentations as part of project/course evaluation.			
Action 4: Train students in visual communication tools (posters, info graphics, and dashboards).			
Action 5: Organize mock interviews and group discussions for communication practice.			
Action 6: Encourage publication of student newsletters, blogs, or technical magazines.			
PO11: Project Management and Finance			
PO11	1.5	1.24	Target Not Achieved
Action 1: Self cost estimation for interdisciplinary project.			
Action 2: The seminar on Project-Based Learning have been conducted to attain the PO11.			
Action 3: Value Added courses conducted for understanding idea to implementation of project.			
Action 4: TA activity based on EFM. Case study on product life cycle management.			
Action 5: Introduce mini-projects with budgeting and resource planning.			
Action 6: Embed basic finance and cost analysis modules in curriculum.			
Action 7: Collaborate with industry for real-world project management case studies.			
PO12: Life-long Learning			
PO12	1.7	1.38	Target Not Achieved

Action 1: Encourage students to enroll in MOOCs and online certification courses.
Action 2: Promote participation in seminars, workshops, and conferences.
Action 3: Provide assignments encouraging self-learning.
Action 4: Motivate students to participate in internships and industrial training.
Action 5: Encourage use of digital learning resources and journals.
Action 6: Organize technical contests and innovation activities.
Action 7: Encourage students to pursue skill development programs.
Action 8: Establish access to online learning platforms.
Action 9: Recognize students achieving additional certifications.

PSOs	Target Level	Attainment Level	Observations
PSO1: Apply programming concepts, algorithms, and data structures to develop data-driven software and web solutions.			
PSO1	2.1	1.63	Target Not Achieved
<p>Action 1: Coding practice sessions and programming assignments to strengthen concepts of programming, algorithms, and data structures. (Codechef)</p> <p>Action 2: Encouraged students to develop mini-projects and web applications using programming languages and data structures.</p> <p>Action 3: Organized coding competitions like Squid Maze, Hackathon in Converges event to improve problem-solving and algorithmic thinking.</p> <p>Action 4: Students are encouraged to participate in programming contests and coding challenges.</p>			
PSO2: Develop intelligent solutions using machine learning, data analysis, and cloud technologies for practical problem-solving.			
PSO2	2.0	2.09	Target Achieved
<p>Action 1: Encouraged students to undertake projects using machine learning and data analytics to solve real-world problems.</p> <p>Action 2: Conducted workshops and expert lectures on machine learning tools and cloud computing platforms.</p> <p>Action 3: Encouraged participation in hackathons and competitions focused on AI, machine learning, and data analytics.</p>			

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 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, 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.

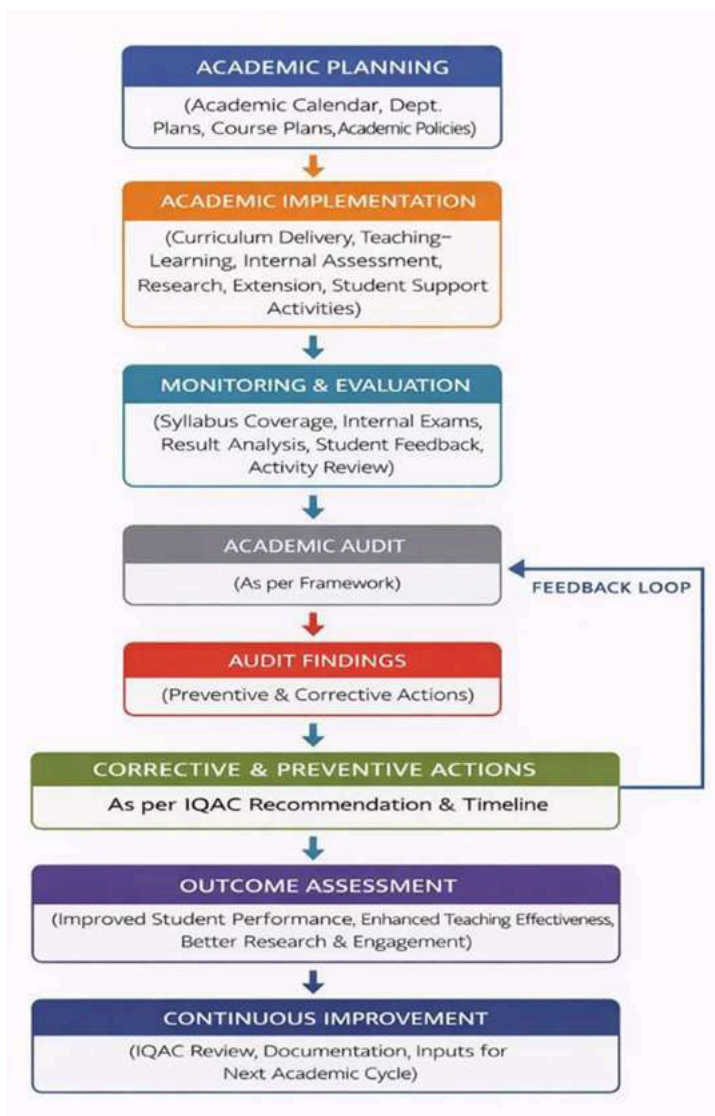


Figure 8.2.1: Academic Audit and Continuous Improvement Framework.

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 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:
 - o Academic calendar
 - o Teaching plans and course files
 - o Laboratory manuals
 - o Assessment records
 - o COs–POs–PSOs matrices
 - o Student feedback
 - o Faculty development records
 - o Research outcomes
 - o Industry interaction details
 - o 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
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1	The curriculum is aligned with the regulatory guidelines, and relevant SDGs.		
2	The department follows a structured and periodic process for curriculum development and revision.		
3	POs and 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 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

- o
- o
- o

8.2 Areas for Improvement

- o
- o
- o

9. Recommendations

- o
- o
- o

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. 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

Sr. No.	Item	Impression of Academic Advisor with grade A(Good)/B(Satisfactory) /C (poor) after observation	Recommendation/Suggestions by Academic Advisors	
		Grade	Actual Status	
1	Implementation of Annual Institutional Plan			
2	Departmental Annual Curricular Plans			
3	College Activity Register for the Academic Year			
4	Departmental Activity Registers (Department- wise)			
5	Add-on Courses (Department-wise) completed during Academic Year			
6	Add-on Courses (Department-wise) in Academic Year			
7	Coverage of Syllabus (Average Percentage)			
8	Teaching of Humanities & Foundation Courses			
9	Teaching of Environmental Science and Ethics			
10	No. of New UG & PG Courses introduced this year			

11	Maintenance of Student Attendance Registers			
12	Feedback forms on Curriculum from students			
III-TEACHING, LEARNING & EVALUATION				
1	Teaching Diaries & Plans in the Prescribed Formats			
2	Co-Curricular Activities (College Level)			
3	Academic Competitions (College & Above level)			
4	Conduct of Internal Examinations			
5	Subject wise result analysis			
6	Teacher wise result analysis			
7	Remedial Classes			
8	Record of Evaluation of Teachers by Students			
IV-RESEARCH AND CONSULTANCY				
1	Is the College a Recognized Research Centre			
2	No. of Research Guides in the College			
3	No. of Research Scholars working for Masters & Ph. D			
4	Major/Minor/Other Research Projects			
5	Research Papers Published in Academic year (International /National)			
6	Papers Presented in Academic year (International /National/ State)			
7	Books Published in Academic year (Single Author/ Co Author)			
8	Seminars/Workshops/ Training Programme Conducted in Academic year (International /National/ State)			
9	Record of Consultancy in Academic year			
10	Record of MOUs in Academic year			
V-EXTENSION ACTIVITIES				

1	Record of Subject/Department Related Extension Activities			
2	Name of the NSS PO & Mobile No.			
3	NSS Attendance register			
4	NSS Activity register			
5	Name of the NCC ANO & Mobile No.			
6	NCC Attendance register			
7	NCC activity register			
8	Name of the Professional Club Coordinator & Mobile No.			
9	Professional Club Activities			
10	Name of the Women Empowerment Cell Coordinator & Mobile No.			
11	WEC Activities			
12	Name of the Eco-Club Coordinator & Mobile No.			
13	Eco- Club Activities			
14	Name of the Consumer Club Coordinator & Mobile No.			
15	Consumer Club Activities			
16	Innovation Activity club			
17	Technology Development and Transfer Cell Activities			
18	Any other Club			
VI-LEARNING RESOURCES				
1	Name of the Librarian & Mob.No			
2	Access timings of the Library			
3	Circulation of Books among Students			
4	Availability of Previous years Question papers			
5	Availability of model answers of previous examinations			
6	Record of Visitors to Library			
7	Status of Library Automation			
8	e- Resources & e-Journals			
9	Number of E-Journals			
10	Number of Print Journals			
11	Access to NPTEL courses			

12	Access to Spoken Tutorials			
13	Access to e-learning tutorials			
14	TED-X activity on campus			
VII-STUDENT SUPPORT ACTIVITIES				
1	Name of Dean/Faculty Incharge & Mob.No			
2	Activities and Support for Sports			
3	Records of events conducted and significant achievements in Sports & Games			
4	Record of cultural programmes conducted			
5	Record of any other extra-curricular activities conducted			
6	Record of Students trained in different verticals			
7	Record of Student placed in In campus placement			
8	Name of Career Guidance Coordinator and Mob. No.			
9	Record of activities Career Guidance and placement cell			
10	Name of Departmental Research Coordinator & Mob. No.			
11	Implementation of Departmental Research Plan			
12	IQAC activities & maintenance of records , (Action Plan/Minutes of Meeting/ submission of AQAR to NAAC etc)			
13	Record of Alumni Association Activities			
14	Record of Grievance Redressal Cell / Anti Ragging Cell			
15	Awards and Prizes earned by students			
16	Mentoring / Counseling System			
VIII-BASIC AMENITIES				
1	Maintenance of drinking water			
2	Maintenance of Sanitation			
3	Rest room for women students			
4	Greenery & Cleanliness			
5	Health Care Facility			

6	Canteen			
IX-GOVERNANCE AND LEADERSHIP				
1	Staff meetings Register			
2	Functioning of Committees in Administration (Minutes of meetings)			
3	Awards/Achievements of faculty			
4	Faculty development initiatives			
X - IT INITIATIVES				
1	e-class rooms (Number & Usage)			
2	Internet Centre			
3	Computer labs (No. of labs & working systems)			
XI-BEST PRACTICES				
1	Record of best/innovative practices by the institution			
2	College Activity Register/ Annual Report			
3	Hard Copy of AQAR			
4	Over All Impression on the College			
Signature of the Deputy Director				
		Signatures of Academic Advisors		
Signature of the Director		1.		
		2.		
IQAC Coordinator				

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.

Institute Marks : 15.00

Academic Performance	CAYm1 (2024-25)	CAYm2 (2023-24)	CAYm3 (2022-23)
No. of faculty members with Ph.D. degree	2.00	2.00	2.00
No. of publications in peer reviewed journals	2.00	2.00	1.00
No. of publications in conferences	3.00	3.00	1.00

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)	7.17	7.54	6.45
Academic Performance Index (API) of the Second-Year Students in the Program (Refer to section 4.4)	7.32	6.84	5.97
Academic Performance Index (API) of the Third-Year Students in the Program (Refer to section 4.5)	7.31	7.05	7.71

9 STUDENT SUPPORT AND GOVERNANCE (120)

Total Marks 116.00

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

Total 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')
Mrs. Tejal Raje	DBKPG6377J	M.Tech	Yes	14/12/2020	Computer Science and Engineering	Assistant Professor	17/08/2023	Yes	Regular	
Ms. Pooja Nira	BYBPM3949Q	M.Tech	Yes	21/09/2021	Computer Engineering	Assistant Professor	01/08/2022	Yes	Regular	
Ms. Pramila K	AVXPA0880A	M.E.	Yes	06/04/2016	Computer Science and Engineering	Assistant Professor	06/04/2022	Yes	Regular	
Ms. Amerah B	AWVPA4225C	M.E.	Yes	12/10/2018	Computer Science and Engineering	Assistant Professor	01/04/2023	Yes	Regular	
Mr. Nitish Jagd	CDFPP9268P	M.Tech	Yes	11/12/2018	Computer Science and Engineering	Assistant Professor	28/08/2025	Yes	Regular	
Mrs. Minakshi I	FQYPP5302K	M.E.	Yes	31/05/2025	Information Technology	Assistant Professor	14/07/2025	Yes	Regular	
Mr. Amit Rajen	BCCPM3917R	M.Tech	Yes	30/12/2013	Digital Communication	Assistant Professor	12/07/2010	Yes	Regular	
Mr. Krunal Pral	APVPR9510E	M.E.	Yes	05/11/2013	Electronics and Communication Engineering	Assistant Professor	04/01/2023	Yes	Regular	
Dr. Chetan Jai	AGVPC4194Q	Ph.D	Yes	04/08/2025	Civil Engineering	Assistant Professor	01/02/2012	Yes	Regular	
Mr. Jitendra M	AKWPJ7776L	M.Tech	Yes	10/08/2016	Structural Engineering	Assistant Professor	02/11/2020	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 M	AUSPG1346B	M.E.	Yes	28/10/2015	Electronics and Telecommunication Engineering	Assistant Professor	07/08/2023	Yes	Regular	
Mr. Aakash Sui	BCCPP7296L	M.E.	Yes	18/02/2015	Infrastructure Engineering and Management	Assistant Professor	22/08/2012	Yes	Regular	
Mr. Suhas Pan	AVOPS5206M	M.Sc	No	07/06/1995	Physics	Assistant Professor	19/07/2001	Yes	Regular	
Dr. Vijay Kashii	BBAPS8865B	M.Sc. and Ph.D. (Chemistry)	No	25/08/2025	Chemistry	Assistant Professor	19/08/2002	Yes	Regular	

Dr. Satish Vase	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. Kalpesh An	ACFPI6052B	M.Sc. and Ph.D. (Chemistry)	No	15/07/2021	Chemistry	Assistant Professor	22/09/2010	Yes	Regular	
Dr. Kiran Ekan:	CLAPS9948A	M.Sc. and Ph.D. (Chemistry)	No	23/06/2018	Chemistry	Assistant Professor	20/01/2011	Yes	Regular	
Dr. Harshal Sul	AJKPJ1540K	M.SC. (Mathematics) and PhD	No	07/10/2024	Mathematics	Assistant Professor	14/09/2011	Yes	Regular	
Dr. Milindkuma	CLEPS7419E	M.Sc. (Physics) and Ph.D.	No	30/04/2016	Physics	Associate Professor	22/09/2010	Yes	Regular	
Dr. Jamir Salir	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 Rarr	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 Re	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. 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
Mr. Patil Manoj	APBPP3815L	M.Tech	Yes	28/07/2005	Thermal and Fluids Engineering	Assistant Professor	15/07/2006	Yes	Regular	
Dr. Jamadar Pr	ALZPJ7551M	Ph.D	Yes	03/10/2025	General Mechanical	Assistant Professor	01/08/2011	Yes	Regular	
Dr. Baviskar Pz	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 I	DCPPB3984N	M.Tech	Yes	22/06/2023	Mechanical Engineering	Assistant Professor	28/08/2025	Yes	Regular	
Dr. Amruta Atul	AGVPD0790K	M.SC. (Mathematics) and PhD	No	07/06/2017	Mathematics	Professor	11/08/2009	Yes	Regular	
Mr. Jain Milkes	AKCPJ4760E	MBA	No	28/07/2009	Softskill	Assistant Professor	06/08/2012	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

A. **Institute Level Mentoring System**

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

Objectives

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

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

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

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

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

The mentoring system functions at various levels, namely the Faculty Members, the Head of the Department, and the Head of the Institution, and Alumnus ensuring comprehensive academic and personal support for students. Each class is assigned a Class Teacher responsible for maintaining detailed student profiles, regularly monitoring attendance and academic progress, and identifying areas requiring support or intervention. The Class Teacher/Local Guardian also acts as a key link between the institution and parents through regular communication, while providing counselling and continuous mentoring to guide students in their academic, personal, and professional development.

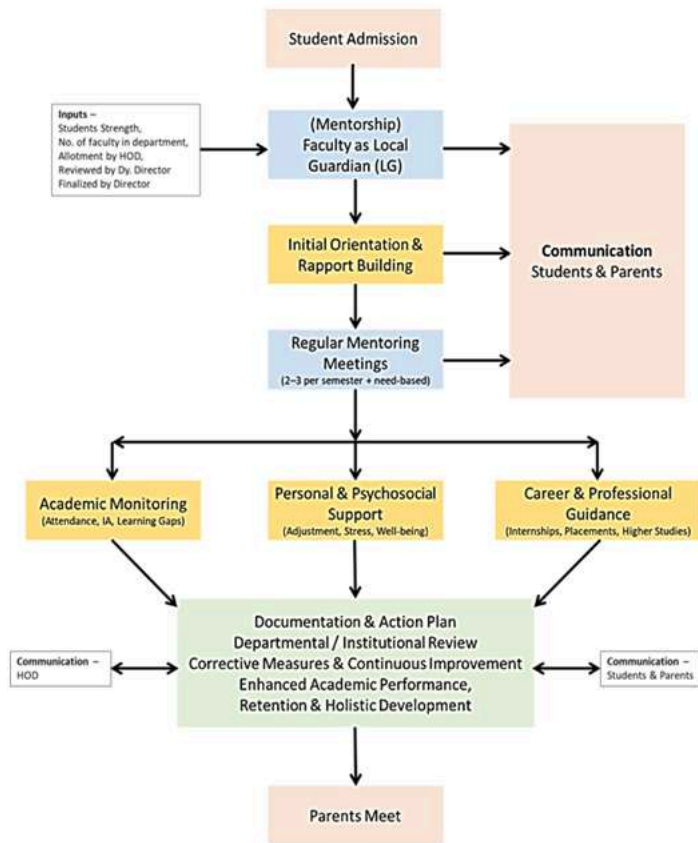


Figure 9.2.1: Structure and Process of the Local Guardian Mentoring System

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

Mentoring Process and Record: Each Local Guardian maintains LG student's record which includes:

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

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

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

- Frequency: 2 to 3 meetings are conducted in a semester.
- Need-Based Support: Additional mentoring sessions are arranged for slow learners, frequently absent students, and those facing academic or personal challenges.
- Physical Mode: One-to-one and group mentoring sessions.
- Online Mode: ERP system, Parent App, telephonic/Whatsapp communication, and virtual meetings.

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

- Attendance and academic performance are communicated through official letters and warning notices
- Semester-wise Parent-Teacher Meetings are conducted to discuss academic performance and overall development.
- Proactive local guardian communication with parents is carried out in cases of absenteeism, poor performance or behavioral issues.
- Same-day ERP alerts are sent to parents for student absenteeism.
- A dedicated Parent App enables parents to track attendance, examination results, and academic progress on a regular basis.

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

- A comprehensive Student Orientation and Induction Program is conducted at the beginning of Program & to support smooth transition from school to college.
- Students are introduced to academic regulations, code of conduct, institutional facilities, support systems, and career opportunities.
- Employability Skill Development Program (ESDP): Semester-wise aptitude training and online assessments through Campus Credential.
- Psychological well-being is recognized as essential for academic success and holistic development.
- Foreign Language Cell: Guidance for international exams, language proficiency, and global career opportunities.
- The Institute has active MoUs with industries, training organizations, and CSR partners to strengthen industry-academia collaboration under OBE.
- Alumni Mentorship Program: Career guidance, placement preparation, and industry exposure through alumni support.

B. Effectiveness of the Local Guardian (LG) System

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

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

9.3 Feedback Analysis (10)

Total Marks 10.00

9.3.1 Feedback on Teaching and Learning Process and Corrective Measures Taken, if any (5)

Institute Marks : 5.00

The institute has established a structured and systematic feedback mechanism to obtain meaningful inputs from students on the Teaching–Learning Process and Academic Facilities. In addition to formal feedback tools, suggestion boxes installed at prominent locations on campus enable students to share concerns and suggestions freely.

Feedback is treated as a key quality enhancement tool and is regularly collected and analyzed for academic planning, faculty development, and infrastructure improvement, ensuring informed decision-making, transparency and continuous improvement across all programs.

Objectives

- To systematically obtain structured feedback from students on the Teaching–Learning Process and academic facilities.
- To assess the effectiveness of teaching practices and adequacy of infrastructure supporting learning.
- To identify strengths and improvement areas in academic delivery and facilities.
- To implement timely corrective and preventive actions based on feedback analysis.
- To enhance student satisfaction, engagement and overall academic experience.
- To institutionalize a continuous quality improvement mechanism through review and monitoring.

Institute has established, institutionalized and effectively implemented a systematic feedback mechanism to evaluate and continuously improve the Teaching–Learning Process across all undergraduate engineering programs.

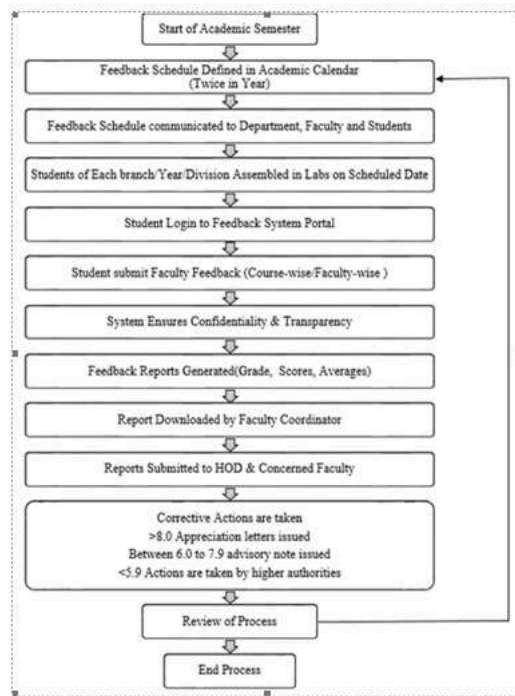


Figure 9.3.1.1: Process Flowchart for Student feedback system.

Feedback on the Teaching–Learning Process is collected regularly through an online feedback system. The process is coordinated by a designated committee to ensure confidentiality, transparency, and unbiased responses. The institute has established a systematic mechanism to collect and review feedback on faculty and academic activities for continuous improvement. (Refer Figure 9.3.1.1)

A. Feedback questionnaire used

The Teaching–Learning Process feedback tool is thoughtfully designed to ensure holistic evaluation of teaching effectiveness across academic, pedagogical, and professional dimensions. The questionnaire covers key aspects of the teaching–learning process. (Refer Figure 9.3.1.2)

QUESTIONNAIRE FOR STUDENT FEED BACK ABOUT THE TEACHER

1. Does the teacher come well prepared for the class?
 - a. Never
 - b. Sometimes
 - c. Always
2. The teachers English, Presentation and teaching skills are
 - a. Unsatisfactory
 - b. Satisfactory
 - c. Good
3. How is the teacher's voice?
 - a. Not audible
 - b. Difficult to hear
 - c. Loud & Clear
4. How the teacher works on white board / smart board?
 - a. Shabby
 - b. satisfactory
 - c. Neat & clear
5. Does the teacher allow you to ask questions and answer the questions you have asked?
 - a. Never
 - b. Evades
 - c. Always
6. Does the teacher revise and ask questions, which are relevant to the topic discussion?
 - a. Never
 - b. Rarely
 - c. Always
7. Does the teacher give sufficient examples and solve previous examination problems in the class?
 - a. Never
 - b. Rarely
 - c. Always
8. Does the teacher assist you in laboratory and solve laboratory related problems in the class?
 - a. Never
 - b. Rarely
 - c. Always
9. Does the teacher give assignments and check the assignments?
 - a. Never
 - b. Rarely
 - c. Always
10. Does the teacher come in time to class and take class till the end of the hour?
 - a. Never
 - b. Sometimes
 - c. Always
11. Does the teacher neglect the acts of indiscipline in the class and outside the class?
 - a. Always
 - b. Sometimes
 - c. Never
12. How is the teacher's assessment of your internal assesment (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.




Specific Feedback													
		Faculty Name: Prof.M.S.Patil Subject : Cloud Computing Year : IY Semester : 2 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	6	3	18	42	6	252	270	288	93.75%	
2.	0	1	0	16	3	48	32	6	192	240	288	83.33%	
3.	0	1	0	5	3	15	43	6	258	273	288	94.79%	
4.	2	1	2	14	3	42	32	6	192	236	288	81.94%	
5.	3	1	3	4	3	12	41	6	246	261	288	90.63%	
6.	1	1	1	9	3	27	38	6	228	256	288	88.89%	
7.	3	1	3	8	3	24	37	6	222	249	288	86.46%	
8.	2	1	2	5	3	15	41	6	246	263	288	91.32%	
9.	4	1	4	8	3	24	26	6	216	244	288	84.72%	
10.	1	1	1	5	3	15	42	6	252	268	288	93.06%	
11.	2	1	2	9	3	27	37	6	222	251	288	87.15%	
12.	1	1	1	7	3	21	40	6	240	262	288	90.97%	
13.	10	1	10	5	3	15	33	6	198	223	288	77.43%	
14.	2	1	2	11	3	33	35	6	210	245	288	85.07%	
Total Students:		48								3541	4032	8.78	
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.

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.

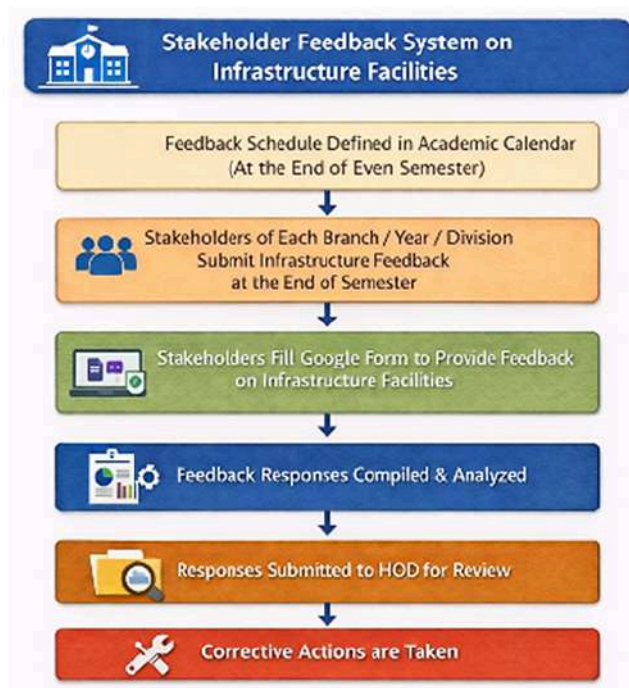


Figure 9.3.2.1: Mechanism for Student Feedback on Infrastructure Facilities

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				

Sr. No	Statement	1	2	3
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			
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

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)

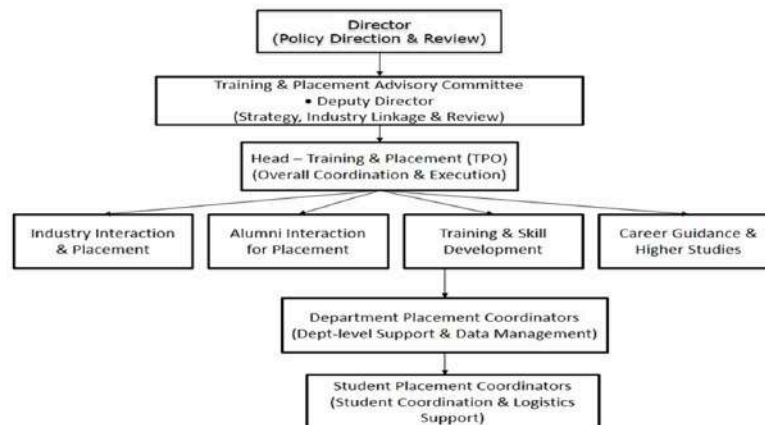


Figure 9.4.1: Training and Placement Cell – Organizational Hierarchy

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	<ul style="list-style-type: none"> • Basic English communication. • Quantitative aptitude. • Logical reasoning and numerical analysis. • Resume writing & Group discussion sessions. • Mock personal interview sessions.
Computer & Language Proficiency Courses	<ul style="list-style-type: none"> • C, C++, Java programming. • AWS • HTML, CSS, SQL, Fullstack • Japanese & German language proficiency
Core Domain Placement Assisted Training Courses	<ul style="list-style-type: none"> • 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
9	Mr. Raunak Mitra	Technical IT
10	Mr. Ashish Gadpayle	Technical IT
11	Mr. Prashant Jha	Technical IT
12	Mr. Akash Satdeve	Technical IT

Sr. No	Trainer Name	Skill Specialization
13	Mr. Jayesh Raut	Technical IT
14	Mr. Prashant Shinde	Technical IT
15	Mr. Ganesh Bhosle	Verbal / Soft Skill
16	Mr. Rakesh Palkhe	Verbal / Soft Skill
17	Mr. Noor Ahmad	Programming and Coding
18	Mr. Jivan Jyoti	Programming and Coding
19	Mr. Pavan Kumar Rao	Japanese language
20	Miss. 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.

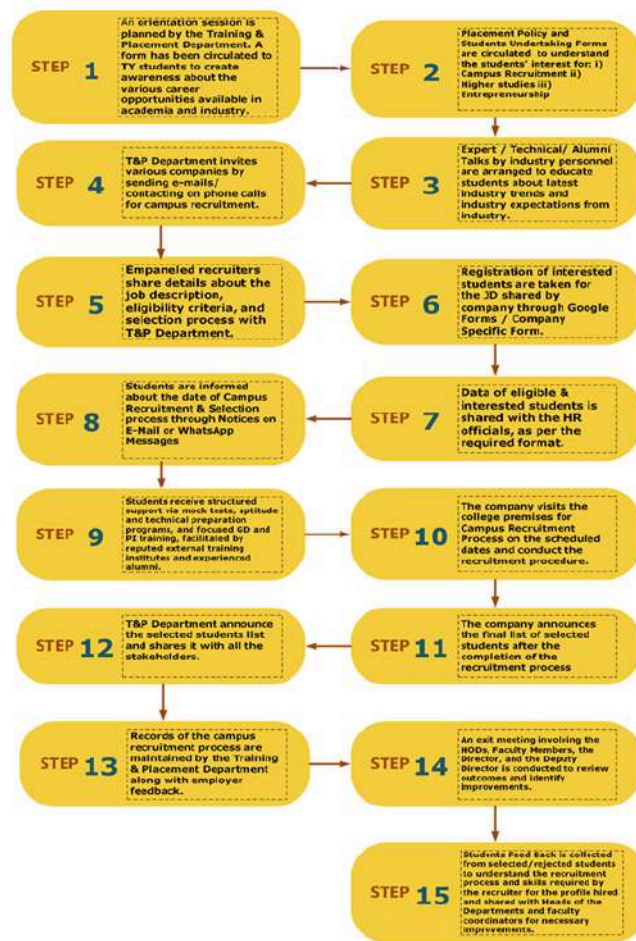


Figure 9.4.3: Process Flow of Training & Placement Activities

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	Academic Year	Academic Year
2025-26	2024-25	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, Ambtronics 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 -1	Softskill/Aptitude Training	Final Year	The Barclays GTT Foundation
3	Softskill/Aptitude Training Program - 2	Softskill/Aptitude Training	Final Year	The Barclays GTT Foundation
4	NAANDI Foundation- Batch 1 (life, soft, communication, interview skills)	Life skill, soft skill, communication, interview skills	Final Year	Mahindras Naandi Foundations
5	NAANDI Foundation- Batch 2 (life, soft, communication, interview skills)		Final Year	Mahindras Naandi Foundations
6	NAANDI Foundation- Batch 3 (life, soft, communication, interview skills)		Final Year	Mahindras 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
11	Full Stack Developer Program	July	100+ Hrs.	Final Year

Sr No	Activity (Training /soft skill)	Month and Duration	No of Hours	Target Students
12	NAANDI Foundation-Batch (life, soft, communication, interview skills)	June	36 Hrs.	Final Year
13	Ethaus Training Program-FSD MERN	July/ Sept	100+ Hrs.	Final Year
14	Ethaus 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	Recruiter Name	Department Participated	On/Off Campus
1	Zydus	E&TC,Electrical,Mechanical	On Campus
2	TSS	Comp,DS,AI ML,E&TC	On Campus
3	Rheal Software	Comp,DS,AI ML,E&TC	On Campus
4	Squad Synergy	Electrical	On Campus
5	Johnson Controls	E&TC,Electrical,Mechanical	Off Campus
6	Recruit CRM	Comp,DS,AI ML,E&TC	Off Campus
7	Patseer	Comp,DS,AI ML,E&TC	On Campus
8	Quality Kiosk	Comp,DS,AI ML,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,AI ML,E&TC,Civil,Electrical,Mec hanical	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,AI ML,E&TC	Off Campus
18	Tech Mahindra	Comp,DS,AI ML,E&TC	Off Campus
19	Delhivery	Comp,DS,AI ML,E&TC,Civil,Electrical,Mec hanical	On Campus
20	Wonder Cement	E&TC,Electrical,Mechanical	Off Campus
21	Sayeesha Infrastructure	Civil	Off Campus
22	Eagle Byte	Comp,DS,AI ML,E&TC	On Campus

Sr No	Recruiter Name	Department Participated	On/Off Campus
23	Apmosys Tech	Comp,DS,AI ML,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,AI ML,E&TC,Electrical,Mechanical	On Campus
28	WebTech	Comp,DS,AI ML,E&TC,Electrical,Mechanical	On Campus
29	Yamai Technologies	E&TC,Electrical,Mechanical	On Campus
30	Wind Hans Technologies	Electrical	Off Campus
31	Bharat Urja Electricals & Engineering	Electrical	Off Campus
32	InfraBeat Technologies Pvt. Ltd.	Comp,DS,AI ML	Off Campus
33	Bit2Sky India Pvt. Ltd	Comp,DS,AI ML	Off Campus
34	Cipher Web Infotech	E&TC	Off Campus
35	R3Sys India Pvt.Ltd.	Comp,DS,AI ML,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,AI ML,E&TC	On Campus
40	Suzlon	Electrical,Mechanical	On Campus
41	AISOLO	Comp,DS,AI ML,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,AI ML,E&TC	Off Campus
45	Talento	Comp,DS,AI ML,E&TC	Off Campus
46	Microdynamic Software Private Limited	Comp,DS,AI ML,E&TC	Off Campus
47	Hiliks Technologies Ltd.	Civil	On Campus
48	Reliance	Civil,Electrical,Mechanical	Off Campus
49	Humming Byte Technologies Pvt. Ltd	Comp,DS,AI ML,E&TC	Off Campus

Sr No	Recruiter Name	Department Participated	On/Off Campus
50	BuildINT	Comp,DS,AI ML,E&TC	On Campus
51	Jackson Green	Civil	On Campus
52	WebLine	Comp,DS,AI ML,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,AI ML,E&TC	On Campus
64	Altimetrik	Comp,DS,AI ML	On Campus
65	STEMx India	E&TC,Electrical	Off Campus
66	Celebal	Comp,DS,AI ML,E&TC	Off Campus
67	Angel CAD CAM	Mechanical	Off Campus
68	CIE Automotive	E&TC,Electrical,Mechanical	Off Campus
69	Ashra Filters Pune	Comp,DS,AI ML,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,AI ML,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,AI ML,E&TC,Electrical,Mechanical	On Campus

Sr No	Recruiter Name	Department Participated	On/Off Campus
80	The Nahars Engineering India Pvt Limited	E&TC,Electrical,Mechanical	Off Campus
81	Sutherland	Comp,DS,AI ML,E&TC,Civil,Electrical,Mec hanical	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,AI ML,E&TC	Off Campus
86	R&W,Pune	E&TC,Electrical,Mechanical	Off Campus
87	Techbean	E&TC,Electrical	On Campus
88	Lumax	E&TC,Electrical	Off Campus
89	Lear	Comp,DS,AI ML,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 Bearing	Mechanical	Off Campus
95	Navgurukul	Comp,DS,AI ML,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,AI ML	Off Campus
99	Vayve Mobility Pvt Ltd(EVA)	E&TC,Electrical	Off Campus
100	Searce	Comp,DS,AI ML	Off Campus
101	Rabbit and Tortoise Technology Solutions	Comp,DS,AI ML	On Campus
102	TCS	Comp,DS,AI ML,E&TC,Civil,Electrical,Mec hanical	On Campus
103	Wipro	Comp,DS,AI ML,E&TC,Civil,Electrical,Mec hanical	On Campus

Table No.9.4.8: List of Recruiter Visited 2023-24 Batch

Sr No	Recruiter Name	Department 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
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

Sr No	Recruiter Name	Department Participated	On/Off 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
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
61	Shree Cement	Mechanical	On Campus

Sr No	Recruiter Name	Department Participated	On/Off Campus
62	IGT Solutions	Comp,DS,E&TC	Off Campus
63	Cappgemini	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
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	Recruiter Name	Department Participated	On/Off Campus
1	Hexaware	Comp,E&TC,Electrical	On Campus

Sr No	Recruiter Name	Department Participated	On/Off 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	Weblines	Comp,E&TC,	On Campus
13	Tech Mahindra	Comp,E&TC,	On Campus
14	Infinity Structural Solution	Civil,	Off Campus
15	Virtusa	Comp,E&TC,Electrical, Mechanical	On Campus
16	Reliance Jio	Comp,E&TC,Electrical,	On Campus
17	Bitwise	Comp,E&TC	On Campus
18	Faurecia	E&TC	Off Campus
19	Rheal Software	Comp,E&TC,Electrical,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

Sr No	Recruiter Name	Department Participated	On/Off Campus
29	Fox Soutlions	E&TC,Electrical	On Campus
30	Tricera Technology LLP	E&TC,	Off Campus
31	Metaroll	Civil	On Campus
32	ZF India Steering Gear LTD	Mechanical	Off Campus
33	Corbello Construction. Company, Pune	Civil	Off Campus
34	IBM	Comp,E&TC,	Off Campus
35	Veda Engineering Private Limited	Mechanical	On Campus
36	Capgemini	Comp,E&TC,Electrical,Mechanical	On Campus
37	Amiti Software Technologies	Comp	Off Campus
38	Nirma	Electrical,Mechanical	On Campus
39	Hitachi	Mechanical	On Campus
40	DTDC	Comp,E&TC,Civil,Electrical,Mechanical	On Campus
41	Deloitte	Comp,E&TC	Off Campus
42	Gridlogics (Patseer)	Comp	On Campus
43	Finulent Solutions	Civil	On Campus
44	Cognizant	Comp,E&TC	On Campus
45	Ekam Venture - Project Management Consultancy (PMC)	Civil	Off Campus
46	Just Dial	Comp,E&TC,Civil,Electrical,Mechanical	On Campus
47	Bedmutha	Mechanical	Off Campus
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

Sr No	Recruiter Name	Department Participated	On/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

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.
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.

Sr. No	Resource Person & Organization	Name of Activity	Date	No. of Student	Outcome/ Output
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 ATIs & SICs	31 Jul 2024	200+	Enhanced collaboration with schools and mentorship framework.
22	Mr. Dipen Sahu, Innovation Officer, MoE Cell (MIC),	Innovation Ambassadors Framework & Reward	29 Jul 2024	200+	Faculty and students trained as Innovation Ambassadors.
23	Dr. Yogesh Fulpagare, Cooler Master, Taiwan	Process of Innovation Development	24 Feb 2024	200	Understanding of structured innovation development processes.
24	Mr. Arjun Deshpande, Founder & CEO, Generic Aadhaar	My Story – Motivational Session	21 Jan 2024	150	Motivation through real entrepreneurial journey.
25	Mr. Arjun Malhotra, Co-Founder HCL Group	Innovation & Entrepreneurship Outreach Program	22 Dec 2023	300+	Exposure to entrepreneurship opportunities beyond campus.
26	Hon'ble Prime Minister Shri Narendra Modi	Launch of "Viksit Bharat@2047: Voice of Youth"	11 Dec 2023	500+	National-level awareness on innovation-led nation building.

C. Student Start-ups: Evidence of Innovation-Driven Outcomes

Structured innovation activities, supported by continuous mentoring from trained faculty and Innovation Ambassadors, enabled students to acquire practical entrepreneurial skills, resulting in registered student start-ups, active founders, and award-winning participation at multiple levels—evidencing innovation-driven outcomes.

Table 9.5.2: Details of Student Start-ups and Founders

Sr. No	Name of Founder	Start-Up Name	Registration No.
1	PRATHAMESH MALI	STEMSAGE	ACG-9397
2	OM PATIL	DRONI CULTURE SYSTEMS PVT. LTD	AAY-3425
3	RAHUL BAVISKAR	SWADESHI HANDICRAFTS PVT. LTD	U51310MH2021PTC358417
4	TEJAS PAWAR	MWS SOLUTION	UDYAM-MH09-0015846
5	ROHIT LOHAR	VIVA-TECHNOLOGY DRIVEN SPONSOR ENGAGEMENT	ACP-1208
6	GIRASE TEJAS	ALLINO	Incubated at DBATU, 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.

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 Unicorn Challenge	Inter National	ISF	Selected for Dubai Round	Global exposure
6	24-25	Maharashtra State Innovation Challenge	State	Govt. of Maharashtra	Winner ₹1,00,000 Prize	Funding support

- More than 2,000 students have participated in 26 innovation and entrepreneurship programs organized by the institute.
- Seven student start-ups have been registered or are currently under incubation as a direct outcome of these initiatives.
- Two student teams received ₹1,00,000 each as state-level start-up funding for their innovative ideas.
- Students have secured state-level awards, won national competitions, and achieved recognition in international innovation and business contests.
- These achievements indicate significant improvement in students' innovation, start-up, and entrepreneurial skills.
- A functional Institution's Innovation Council (IIC) has been in operation since 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.

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).

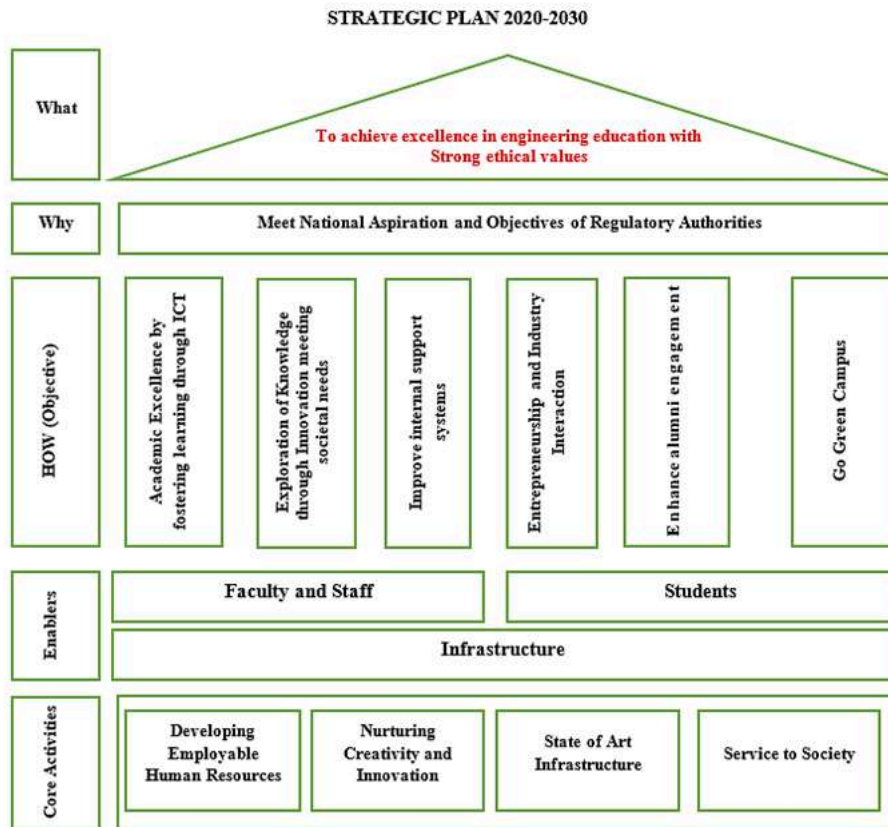


Figure 9.6.1.1: Institutional Strategic Planning Framework (2020–2030)

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

Sr. No	Strategic Plan
2	Exploration of Knowledge through Innovation meeting societal needs
3	Improve Internal Support Systems
4	Entrepreneurship and Industry Interaction
5	Enhance alumni engagement
6	Go Green Campus

Strategies:

Curriculum Enrichment and Value Addition: Being an affiliating College the HEI has insignificant role in curriculum designing and development. However measures have been taken for Industrial certificate Course, Value added courses and activities sensitizing students to cross-cutting issues such as gender, environment and sustainability, human values and professional ethics, development of creative and divergent competencies.

Table No.9.6.1.2: Key Result Areas and Performance Measures for Academic Quality Enhancement

Key Result Areas	Measures
Curriculum Enrichment	Industrial Certificate Courses
	Courses focusing on Skill development and Employability
	Value Added Courses
Learner Centric Curriculum delivery	Academic Plan as per OBE & Academic calendar
	Quality projects
	ICT utilization / Pedagogy Tools
	Online Self learning Resources
	Industry exposure through Internships
	Workshops/FDPs on Pedagogy/Technology
	Learning Management System
Smart Classrooms	Multimedia and support equipment
	E-Learning Facilities.
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 Monographs, 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 time.
- 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 Technologies

B. Approval & Implementation

The objective is to ensure the quality and imbibe the culture of excellence and focus on the time-bound goals set for academic, administrative, research and development activities. The entire process is based on participative approach wherein the faculty members, and other stakeholders are involved in the development of plans and its efficient execution. The summary is as follows

The Strategic Plan clearly focuses on academic excellence, research and innovation, industry engagement, ethical values, faculty and staff development, student development, and transparent governance, with defined timelines, responsibilities, and measurable outcomes. The availability of the Institute's strategic intent, priority areas, and quality assurance mechanisms is reflected through publicly accessible IQAC documentation and quality assurance reports, which function as institutional strategic reference documents and demonstrate openness to stakeholders.

Web evidence:

- IQAC & academic planning framework: <https://www.rcpit.ac.in/iqac-and-academics> (<https://www.rcpit.ac.in/iqac-and-academics>)
- AQAR 2022-23 (strategic focus, quality initiatives, e-governance, monitoring): <https://www.rcpit.ac.in/files/AQAR-2022-23.pdf> (<https://www.rcpit.ac.in/files/AQAR-2022-23.pdf>)

The Institutional Strategic Plan and IDP were approved by the competent authority, namely the Governing Body, after due deliberations. The governance framework supporting strategic approval and oversight comprises the Governing Body, Academic Council, and Finance Committee, ensuring balanced consideration of policy, academic planning, and financial feasibility. The constitution, roles, and statutory nature of these bodies are documented and disclosed through mandatory statutory disclosures available on the Institute website, reinforcing transparency and regulatory compliance.

Web evidence:

- Mandatory Disclosure (Governing Body, Finance Committee, Academic Council, governance structure): <https://www.rcpit.ac.in/uploads/download/1684477044.pdf> (<https://www.rcpit.ac.in/uploads/download/1684477044.pdf>)
- IQAC & Academic Committees page (academic governance linkage): <https://www.rcpit.ac.in/iqac-and-academics-committee> (<https://www.rcpit.ac.in/iqac-and-academics-committee>)

The implementation of the Strategic Plan and IDP is carried out through department-wise annual action plans aligned with institutional strategic objectives. These action plans translate long-term goals into short-term and mid-term initiatives covering curriculum delivery, outcome attainment, research activities, industry interaction, faculty development, student support systems, and governance processes. Alumni actively contribute to implementation through mentoring, curriculum feedback, internships, placements, and professional guidance, facilitated via the Institute's dedicated alumni portal.

Web evidence:

- Alumni engagement and participation platform: <https://alumni.rcpit.ac.in> (<https://alumni.rcpit.ac.in/>)

The Internal Quality Assurance Cell (IQAC) through periodic reviews, academic and administrative audits, stakeholder feedback analysis, and preparation of Action

Taken Reports (ATRs) systematically carry out Monitoring and evaluation of the Strategic Plan and IDP. The progress of strategic initiatives, corrective actions, and quality improvement outcomes are documented through Annual Quality Assurance Reports (AQARs) and placed before the Governing Body for review, ensuring accountability, transparency, and continuous improvement. Evidence of continuity and incremental improvement is available through successive AQARs published on the Institute website.

Web evidence:

- AQAR 2022–23 (implementation, review): <https://www.rcpit.ac.in/files/AQAR-2022-23.pdf> (<https://www.rcpit.ac.in/files/AQAR-2022-23.pdf>)
- AQAR 2021–22 (continuity and monitoring incremental improvement outcomes): <https://www.rcpit.ac.in/files/AQAR-2021-22.pdf> (<https://www.rcpit.ac.in/files/AQAR-2021-22.pdf>)

Thus, the Institutional Strategic Plan and IDP of RCPIT are publicly available, formally approved by the competent authority, systematically implemented through departmental action plans, and continuously monitored through IQAC-led mechanisms, with key evidence transparently disseminated through the Institute website, alumni portal, and official communication platforms.

9.6.2 Governing Body, Administrative Setup, Functions of Various Bodies, Service Rules, Recruitment procedures and Promotion Policies (10)

Institute Marks : 10.00

A. Organizational Set-up: Governing Body, Administrative Setup, Functions of Various Bodies

R. C. Patel Institute of Technology has established a clearly defined, participative, and autonomous governance and administrative framework that ensures academic autonomy, transparent administration, financial accountability, and holistic institutional development. The governance system is structured with distinct statutory, executive, academic, administrative, developmental, and functional layers, each with clearly defined roles, approval mechanisms, and documented processes.

At the apex, the Governing Body (GB) functions as the highest statutory authority responsible for policy formulation, strategic direction, institutional oversight, and regulatory compliance. The Academic Council (AC) operates as the apex academic body, ensuring academic autonomy through approval of curricula, academic regulations, assessment frameworks, and Outcome Based Education (OBE) implementation. The Finance Committee (FC) ensures financial oversight, budget approval, and prudent resource allocation. The constitution, roles, and approval of these statutory bodies are disclosed through mandatory statutory disclosures available on the Institute website.

Under the Academic Council, Program-wise Boards of Studies (BoS) function as the primary academic bodies responsible for curriculum design, revision, and academic content development. The recommendations of the BoS are placed before the Academic Council for approval, ensuring a bottom-up, academically rigorous, and industry-relevant curriculum development process, which is a key requirement for autonomous institutions. The Director serves as the chief executive authority responsible for implementation of decisions of statutory bodies and overall institutional administration, supported by the Deputy Director. Execution of academic and administrative functions is carried out through three clearly differentiated yet integrated structures (Refer Figure 9.6.2.1)

- Academic & Assessment Structure, comprising Heads of Departments (HODs) and the Controller of Examinations (COE). The COE ensures transparent, fair, and independent conduct of examinations and evaluations, functioning academically under the Academic Council and administratively reporting to the Director, thereby maintaining separation between teaching and evaluation.
- The functioning of these structures is supported by statutory and functional committees, including the Internal Quality Assurance Cell (IQAC), Purchase Committee (for transparent and need-based acquisition of latest technologies), Recruitment Committee (to attract and select a diverse pool of talent), Student and Employee Grievance Redressal Committees, Anti-Ragging Committee, Internal Complaints Committee (Women Harassment Prevention), SC/ST Cell, Disciplinary Committee, Sports and Cultural Committees, NSS, Student Clubs. All committees function with approved composition, defined roles, documented meeting notices, agendas, minutes, and Action Taken Reports (ATRs).

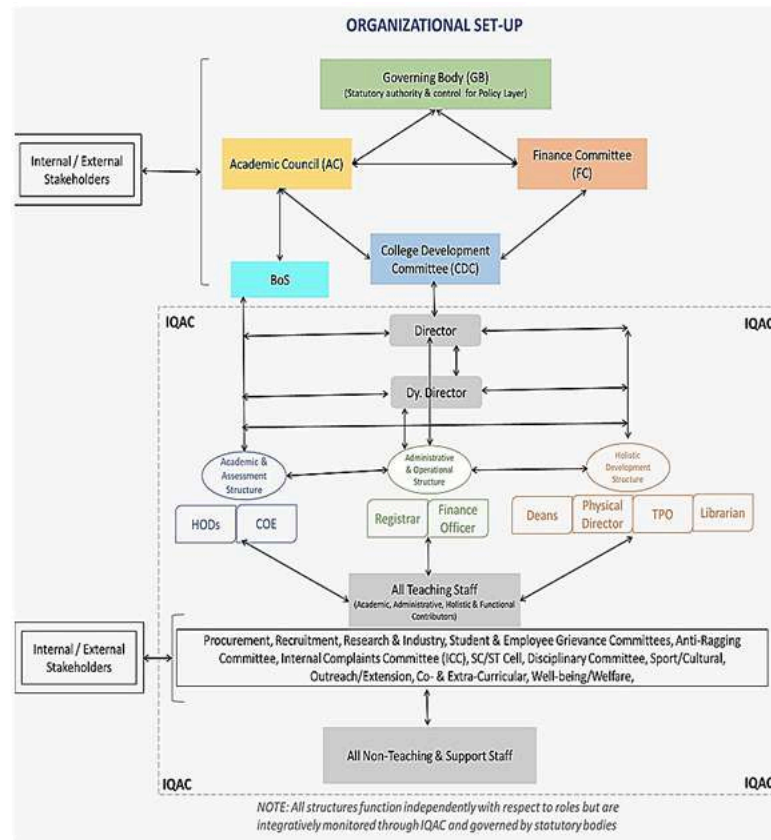


Figure 9.6.2.1: Governance, Leadership and Institutional Support Structure of the Institution

- All teaching and non-teaching staff contribute to institutional functioning through these structures and committees, forming an integrated institutional platform. The entire governance and administrative framework is independently governed by statutory bodies and integratively monitored through IQAC, ensuring transparency, accountability, and continuous quality improvement. The Institute follows documented service rules, recruitment procedures, promotion policies, and procurement norms, which are published through mandatory disclosures on the Institute website.
- Administrative & Operational Structure, comprising the Registrar and Finance Officer, responsible for implementation of service rules, recruitment and promotion procedures, statutory compliance, administrative coordination, financial administration, procurement execution, and audit readiness.
- Holistic Development Structure, comprising Deans, Physical Director, Training & Placement Officer (TPO), and Librarian, focusing on research and innovation, faculty development, student development, employability enhancement, leadership, wellness, sports, cultural activities, learning resources, outreach, and extension activities.

B. Service Rules

R. C. Patel Institute of Technology follows clearly documented service rules for teaching and non-teaching staff, defining service conditions related to appointment, probation, confirmation, workload, leave, performance expectations, disciplinary procedures, grievance handling, and separation.

Web evidence: Mandatory Disclosure:

<https://www.rcpit.ac.in/uploads/download/1684477044.pdf> (<https://www.rcpit.ac.in/uploads/download/1684477044.pdf>)

Service Rule:

<https://www.rcpit.ac.in/academics/servicerules> (<https://www.rcpit.ac.in/academics/servicerules>)

These service rules are aligned with AICTE norms, State Govt. norms, affiliating university guidelines, and management policies, and are implemented through the Registrar under the supervision of the Director. The service rules and related governance provisions are publicly disclosed through the Institute's Mandatory Disclosure, ensuring transparency and stakeholder awareness.

C. Recruitment Procedures

Recruitment at RCPIT is carried out through a transparent, merit-based, and committee-driven process to attract a diverse and competent pool of academic and administrative talent. Vacancies are widely advertised through multiple channels, including print media, the Institute website, and official professional platforms such as LinkedIn, Facebook, Instagram ensuring broad visibility and equal opportunity. Reservation for the posts is applicable as per the applicability to Minority Institutions and is clearly stated in each published advertisement.

The Institute follows flexible recruitment modalities, including online and offline interviews, as well as off-campus interviews and selection processes wherever appropriate, to widen outreach and attract quality candidates. Applications received are scrutinized as per eligibility norms, and shortlisted candidates are invited for structured selection processes.

- The Selection Committee is constituted in accordance with institutional and regulatory norms and includes:
- Members of the Governing Body, Director and Deputy Director, Concerned Head of the Department (HOD), and
- Two subject experts, including internal and external experts from university affiliated colleges.

The University faculty-selection along with approvals of faculty is carried out as per the guidelines issued by the University. This multi-member committee structure ensures fair evaluation, academic rigor, transparency, and objectivity in selection decisions. The competent authority before appointment approves recommendations of the Selection Committee.

Web evidence:

Mandatory Disclosure (Recruitment procedures and selection framework): <https://www.rcpit.ac.in/uploads/download/1684477044.pdf>
(<https://www.rcpit.ac.in/uploads/download/1684477044.pdf>)

Official communication and outreach platforms: <https://www.rcpit.ac.in/careers>, <https://www.linkedin.com/school/shirpurrpcpit/>
(<https://www.rcpit.ac.in/careers>, <https://www.linkedin.com/school/shirpurrpcpit/>)

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>)

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.

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	26,53,87,223.4	3126	84896.74

Table 2 - CFYm1

Total Income 347559054.79				Actual expenditure(till...):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
342049550.00	157850.00	5351654.79	0	347559054.79	2819	123291.61

Table 3 - CFYm2

Total Income 335917998.69				Actual expenditure(till...):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
266009533.00	203955.00	69704510.69	0	335917998.69	2351	142883.03

Table 4 - CFYm3

Total Income 298391116.17				Actual expenditure(till...):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
264594318.00	41828.00	33754970.17	0	29,83,91,116.1	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	561850C	4003147	155000C	1418465	195000C	179577C	266000C	258036C
Library	301000C	2144543	390000	365810	475000	428611	600000	562977

Laboratory equipment	1931300	1376081	1800000	1633478	4000000	3740419	2030000	1942207
Teaching and non-teaching staff	2001330	1485989	2605000	2580216	2440000	2399152	2083000	2062747
Outreach Programs	1505000	1072271	100000	93515	250000	236479	44000	41828
R&D	2634000	1876475	260000	220720	200000	190765	44000	41417.4
Training, Placement and Industrial	9030000	6433629	7500000	7142410	7200000	6839043	3230000	3035586
SDGs	6533600	4557154	6200000	5892102	7000000	6373556	7640000	7069269
Entrepreneurship	1693000	1206305	150000	139055	175000	168410	142000	133549
Others, specify	1658400	4691188	1500000	720000	7000000	2705775	4000000	4092368
Total	375423000	265387223.11	379400000	356143592.53	352800000	335917998.69	133920000	126973714.36

9.8 Program Specific Budget Allocation, Utilization (8)

Total Marks 8.00

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 46717705		Actual expenditure (till...): 33024833.59		Total No. Of Students 389
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
47917705	46717705	33024833.59	68.92	84896.74

Table 2 :: CFYm1

Total Budget 44009862		Actual expenditure (till...): 41312151.39		Total No. Of Students 327
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
48209862	44009862	41312151.39	85.69	126336.85

Table 3 :: CFYm2

Total Budget 39466780		Actual expenditure (till...): 37578236.35		Total No. Of Students 263
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
43666780	39466780	37578236.35	86.06	142883.03

Table 4 :: CFYm3

Total Budget 25599444		Actual expenditure (till...): 24313350.21		Total No. Of Students 198
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
29799444	25599444	24313350.21	81.59	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	2403313	1712398	2087974	1894811	4355593	407293€	1654074	1582539
Software	311100.4	2905444	4059950	4011973	5444491	506330€	4074074	3334522
SDGs	8130423	5670931	7191912	6834755	7622288	6940154	6225185	5760145
Support for faculty developmen	62220.0	5973129	9279886	8351898	8711187	784006€	4074074	3911111
R & D	327775.1	2335089	3015963	2560321	2177797	2077237	358519	337476
Industrial Training, Industry exp	1123694	8006020	8699893	8285094	7840068	7447022	2631851	2473440

Miscellaneous Expenses*	0	0	0	0	0	0	0	0
Total	12358527.51	8767716.47	10313433.84	9707318.57	9495193.55	8697654.35	7105511.13	6541681.45

9.9 Quality of Learning Resources (Hard/Soft) (5)

Total Marks 5.00

The institution ensures the quality of learning resources through systematic planning, regular up-gradation, and effective utilization of physical and digital resources to support outcome-based education. These resources are continuously enhanced to meet curriculum requirements, industry expectations, and the diverse learning needs of students.

A. Availability of Learning Resources

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 library's 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
13	News Paper	English- 2 Marathi- 6

Sr. No.	Particulars	Details
14	Library Networking	Available
15	No. of Multimedia PCs	10
16	Type of Access	Open Access
17	Library Management Software	LIBMAN (Master-soft)
18	Bar-code or RF tab book Handling : Available	
19	e-journals	DELNET :1103, N-List :6069, NDL : 7 lakh
20	DELNET : 10/05/2025 to 09/05/2026 (Rs. 13570/-) N-List (INFLIBNET): Till Process NDL : 29/03/2025 to 29/03/2026 (Free)	

M-OPAC: 100% assurance for import of other library software data into LIB-MAN. Mark standard data import/export. Book data fetching from ISBN site and Google API saves data entry time. Supports EBook uploading & reading. Follows all library latest standards such as Marc 21, library congress standards, AACR2. Reports / data export to word, excel, PDF, text. Fully secured & maintenance free. Fully documented user manual. Best backup and recovery. Reports on laser/inkjet printers. Lib-Man is embedded with multilingual fonts, Barcode & QR Code fonts. Print barcode using barcode printer like Argox, TSC, etc.

It supports all latest technologies which include cloud hosting, smartphone, tablets, SMS, email, UHF RFID, payment gateway, etc. It also supports smart phone app for book search - MOPAC.

Usage Barcode System: The RCPIT Library uses a barcode-based circulation system that includes barcoded books, borrower cards, and barcode readers. Each user is issued a borrower card with a unique barcode, enabling quick and accurate identification during issue and return transactions.

This system ensures efficient circulation, minimizes manual errors, and maintains reliable usage records through the library management software.

Foreign Language and Quantitative Examination Learning Resource: The institute provides a wide range of quality learning resources, including physical books and online e-learning materials, to support students in foreign language proficiency and preparation for competitive examinations and higher studies.

B. Accessibility of Learning Resources

The Central Library plays a vital role in supporting the Engineering & Technology program by providing extensive print and digital resources, including textbooks, reference books, national and international journals, and e-resources through platforms such as DELNET, N-LIST, NDL, and Springer.

Table 9.9.2: Last three years enhancement

Sr. No.	Details	2023-24	2024-25	2025-26
1	Title	185	132	48
2	Volume	1151	749	197
3	Print Journals	60	72	66
4	E-Resources	DELNET: E-Journals – 37,847; E-Books – 1,683 N-List: E-Journals – 3,537; E-Books – 31 lakh NDL: E-Journals – 3 lakh; E-Books – 7 lakh Springer E-Journals- 514 (Till on 2025) Copyleaks		

The library follows an open-access system and is equipped with modern facilities and library management software to ensure easy and effective access to information. The well-equipped library significantly enhances teaching-learning and research activities by facilitating access to updated knowledge resources, supporting self-learning, project work, and research. Extended working hours, digital access, and adequate reading space contribute to improved academic performance, research output, and overall student learning experience.

Table No. 9.9.3: Foreign Language and Quantitative Examination Learning Resource

Sr. No.	Particulars	Details
1	Foreign Language Learning Resource Books	353
2	Foreign Language Online E- Learning Resource	85
3	Quantitative Examination (GATE, GPAT, MPSC & Other)	600

E- Resource:

The institute provides access to a wide range of digital learning resources and platforms to support academic excellence, skill development, and employability. Subscriptions to national and international digital libraries, virtual laboratories, coding platforms, language learning tools, and industry-supported programs ensure continuous learning beyond the classroom and promote self-paced, outcome-based education.

DELNET: (Development Library Network):

E-Book : 1683, E-Journals: 37847



NDL: - National Digital Library

- E-Book - 7 lakh (Authors-3 lakh & Languages- 70)
- E-Journals - 3 lakh (Authors- 2 lakh)
- Videos - 18000 (Video Lectures from Source 11)
- Thesis - 95000 (Researches from different Indian Institute)

N-List: - INFLIBNET:

- E-Book - 31 lakh
- E-Journals - 3537

Virtual Lab: Virtual Labs are available to students to perform experiments remotely using simulation-based and interactive modules. These labs support conceptual understanding and practical learning beyond regular laboratory hours, especially for core engineering subjects.

Code-Chef: Code Chef is used as a programming practice and competitive coding platform to enhance students' problem-solving, logical thinking, and coding skills. Students participate in practice sessions and contests aligned with curriculum requirements.

Language Lab:

The Language Lab supports the development of communication skills, listening, speaking, reading, and writing abilities. It is used for improving professional communication, presentation skills, and employability readiness.

Foreign Language:

Foreign language learning specially (Japanese and German) resources are provided through print books and online platforms to help students acquire basic proficiency in international languages, supporting global employability and higher studies.

Infosys Springboard:

Infosys Springboard is an online digital learning platform offering free courses in technical, professional, and life skills. Students use the platform for self-paced learning, certification courses, and industry-oriented skill development.

Campus Credentials:

Campus credentials are provided to students for authenticated access to subscribed e-resources, digital library platforms, and online learning systems, ensuring secure and seamless utilization of academic resources.

Wipro TalentNext:

Wipro TalentNext is an industry-oriented learning initiative that provides students with access to technical training modules, skill development programs, and assessments to enhance employability and industry readiness.

Table No. 9.9.4: Access to e-learning Resources

Sr. No.	Particulars	Details
1	DELNET	https://delnet.in/index.html (https://delnet.in/index.html)
2	NDL	https://club.ndl.iitkgp.ac.in/club-home (https://club.ndl.iitkgp.ac.in/club-home)
3	OPAC	https://libcloud.mastersofterp.in/OPAC_V3/ (https://libcloud.mastersofterp.in/OPAC_V3/)
4	N-List	https://nlist.inflibnet.ac.in/ (https://nlist.inflibnet.ac.in/)
5	E- shodhganga	https://shodhganga.inflibnet.ac.in/ (https://shodhganga.inflibnet.ac.in/)
6	NPTTEL	https://nptel.ac.in/ (https://nptel.ac.in/)

Sr. No.	Particulars	Details
7	Swayam	https://swayam.gov.in/ (https://swayam.gov.in/)
8	Foreign Language CD	https://forms.gle/6xRkW5Lo1daX6ndd7 (https://forms.gle/6xRkW5Lo1daX6ndd7)
9	Plagiarism Software (Copy-leaks)	https://copyleaks.com/ (https://copyleaks.com/)
10	Springer Nature 3 Subject Collections	https://link.springer.com/brands/springer (https://link.springer.com/brands/springer)
11	Virtual Lab	https://iitb.vlabs.co.in/outreachportal/ (https://iitb.vlabs.co.in/outreachportal/)
12	Code-Chef:	https://www.codechef.com/college/dashboard (https://www.codechef.com/college/dashboard)
13	Language Lab: I Tell - Orell Talk Corporate Version	https://sesrcp.in/it/login.html (https://sesrcp.in/it/login.html)
14	Infosys Springboard	https://infyspringboard.onwingspan.com/web/en/page/home (https://infyspringboard.onwingspan.com/web/en/page/home)
15	Campus Credentials	https://code.campuscredentials.com/ (https://code.campuscredentials.com/)
16	Wipro TalentNext	https://talentnext.wipro.com/PBLApp/index.jsp (https://talentnext.wipro.com/PBLApp/index.jsp)

All print resources are classified (DDC) and catalogued using LIBMAN ILMS:

All print resources in the RCPIT Library are systematically classified using the Dewey Decimal Classification (DDC) scheme and catalogued through the LIBMAN Integrated Library Management System (ILMS), ensuring easy organization, quick retrieval, and efficient access to learning resources.

Print Resources Access during Library Working Hours:

Print resources in the RCPIT Library are accessible to students and faculty during regular library working hours. During examination periods, library hours are extended by two additional hours to provide enhanced support for study and academic preparation.

Print Journals: To support quality teaching-learning, research, and academic enrichment, the institute subscribes to a wide range of national and international journals across all departments. These journal subscriptions provide faculty members and students with access to recent research findings, emerging technologies, and advancements in their respective disciplines. The table below presents department-wise details of national and international journal subscriptions for the period January to December 2025, highlighting the adequacy and relevance of scholarly resources available to support curriculum delivery, research activities, and continuous professional development.

Table No. 9.9.5: Statistics of Print Journals: National and international journals

Sr. No.	Departments	Total Journals	Total frequency
1	Computer Engineering	12	33
2	CSE (Data Science) Engineering	6	23
3	Artificial Intelligence & Machine Learning Engineering	6	23
4	Artificial Intelligence Data Science (AIDS)	6	17
5	Information Technology (IT)	6	19

Sr. No.	Departments	Total Journals	Total frequency
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

The institution has implemented a comprehensive Mastersoft Enterprise Resource Planning (ERP) system to ensure efficient academic administration, student support, transparency, and Outcome-Based Education (OBE) compliance. The ERP integrates all academic and administrative activities into a single digital platform with role-based access for students, faculty, administrators, and management.

Mastersoft Enterprise Resource Planning (ERP)

- Student Support Module:** The Student Support Module provides end-to-end services for students, including online admission, registration, attendance monitoring, mentoring, grievance Redressal, scholarships, placements, and hostel, transport, and feedback systems. Students and parents have real-time access to academic and attendance information, promoting transparency and student-centric learning.

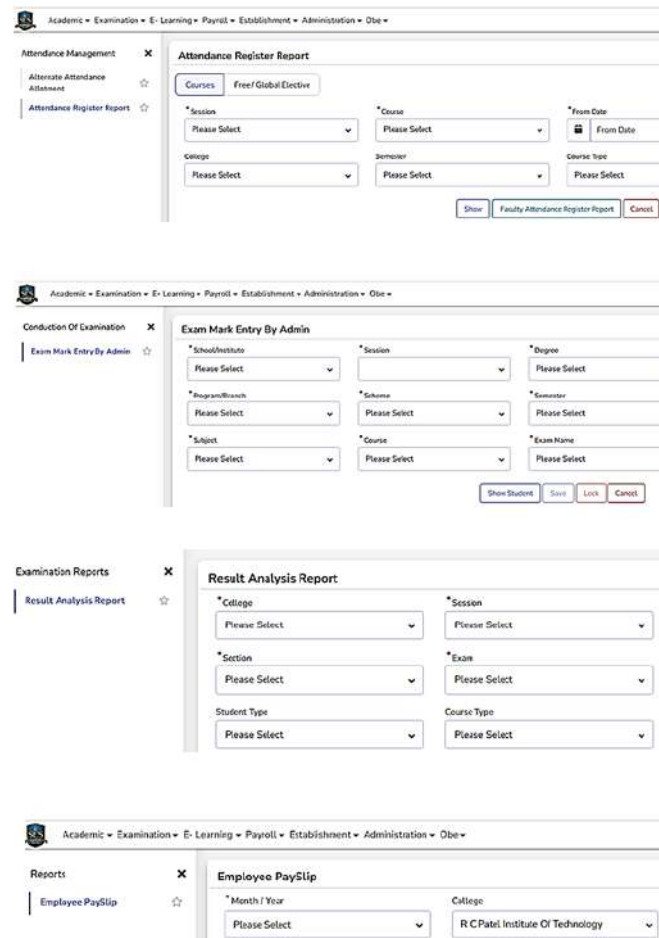


Figure 9.10.1: Mastersoft Enterprise Resource Planning (ERP) Modules

- 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.

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
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

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

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

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).

R. C. Patel Institute of Technology (RC PIT), Shirpur has established a structured and transparent Faculty Performance Appraisal and Development System (FPADS) to enhance teaching effectiveness, research productivity, professional growth, and institutional contribution. (Refer Figure 9.13.1)

The system ensures continuous faculty development through systematic evaluation, feedback, and targeted improvement initiatives. R. C. Patel Institute of Technology, Shirpur follows a structured self-appraisal system for faculty assessment comprising three categories:

- Teaching, Learning and Evaluation
- Co-curricular, Extension Professional Development
- Research, Publications and Academic Contributions.

Faculty members submit the appraisal form with supporting documents at the end of each academic year, which is evaluated by an institute-appointed committee.

A. Performance Appraisal System

The implementation of a self-appraisal system involves the following steps:

Establishing a committee: Committee comprising Governing Body members, Director and the respective Heads of Department (HODs) is constituted to conduct the Faculty Performance Appraisal at the end of each academic year.

Performance Review: The committee reviews the progress and performance of faculty members based on various criteria and indicators. These include teaching effectiveness, research contributions, professional development, and other relevant factors.

Overall Performance Rating: After reviewing the performance, an overall performance rating is assigned to each faculty member. This rating serves as feedback for self-improvement and helps identify areas where faculty members need to focus on enhancing their skills and performance.

Feedback and Recommendations: Faculty members who receive a poor performance rating are provided with specific feedback on areas requiring improvement. The feedback aims to guide them towards self-improvement and professional development.

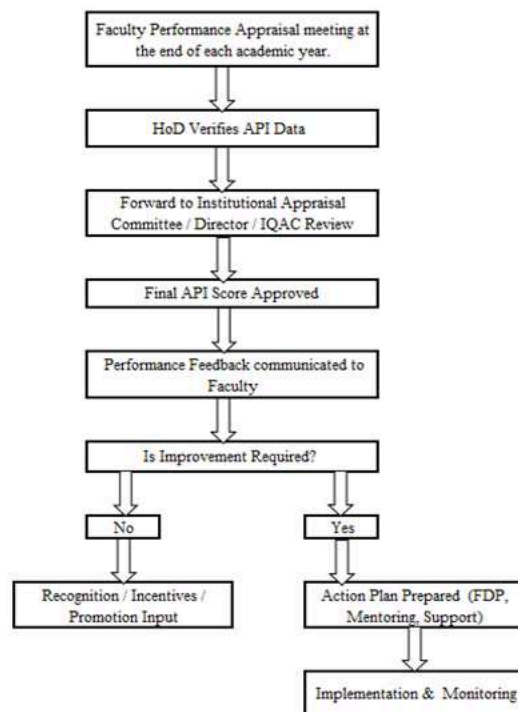


Figure 9.13.1: Faculty Performance Appraisal and Feedback Mechanism

Recognition and Rewards:

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 (4)&100 (6)	Avg. of Col. (7)	Performance & Multiplying Factor (8)	Max. Weight (9)	API Score Claimed 2*9 (10)	Verified API Score (11)
1	3Y [A]	SOM	45	45	100.00	100.00	Excellent-1	20	20	20
2	3Y [F]	EO	90	90	100.00					
3	3Y [I]	EO	86	86	100.00					
4										
5										
6										
7										
8										
9										
10										

1.2) LECTURES AND ACADEMIC DUTIES IN EXCESS OF UGC NORMS (MAXIMUM SCORE: 10POINTS)

SN (1)	Type of Activity (2)	No. of Students Benefited (3)	No. of Hours Engaged for the Activity (4)	API Score Claimed (Sum of Col. (4) /30)*2 (5)	Verified API Score (11)
1	Remedial Coaching SOM	20	6	10	10
2	Career Counseling Admission	57	72		
3	Competitive Exam Preparation				
4	General Counseling	240	48		
5	Soft Skill Development of the Student				
6	Extra Teaching Load		57		
7	I.G 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	40	1	Online feedback	15	15
4				Manual paper feedback		
TOTAL					15	15

1.5) 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: 39 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	<u>Avishtkar</u> (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 Satsbha.	5	5	5
TOTAL of 2.2A			5	5

2.2B) ADMINISTRATIVE AND ACADEMIC (MAXIMUM SCORE: 20 POINTS)

SN	Name of Activity	API Score Allotted	API Score Claimed	Verified API Score
1	Head /Dean/Rector	5		
2	Vice Principal	10		
3	Admission Committees (First Year D2D and Departmental)	5	3	3
4	Converges-2023 (Dept. Co-ordinator)	5	5	5
5	Statutory Committees of the University	5		
6	Placement Activity	5	3	3
7	Academic Committee* (Class Teacher, Local Guardian, Time Table, Examination Competitive Exam Committee such as NET/SET/GATE etc) (Points=5 for each case).	5	5	5
8	NBA Committee	5	5	5
9	Happiness Matrix Scheme (Co-ordinator)	5	5	5

10	Ansycs Training for Faculty Members (Co-ordinator)	5	5	5
11	B&S Committee (Co-ordinator)	5	5	5
TOTAL of 2.2B			20	20
TOTAL of 2.2(2.2A & 2.2B)			25	25

2.3) PROFESSIONAL DEVELOPMENT ACTIVITIES (MAXIMUM SCORE: 15 POINTS)

SN	Name of Activity	API Score Allotted	API Score Claimed	Verified API Score
1	Participation in Seminar / Symposia / Conference (GRAMM-2022, ERP NBA NEP OBE IPR in ROPIT (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	PEEKZONSCATB	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								18	18

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) ARTICLE/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) PAPER 3 IN CONFERENCE PROCEEDING 3									
SN	Title with Page no.	National / International or Other	Details of Conference Publication	Full Paper or Abstract	ISSN/ ISDN No.	No. of Co-Authors	Whether you are main author?	API Score Claimed	Verified API Score
1	PEEKCCNSCATB	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-Invest	API Score Claimed	Verified API Score
1								0	
2								0	
3								0	
4								0	
5								0	
TOTAL								0	0

3.4) RESEARCH GUIDANCE /QUALIFICATION (MAXIMUM 20 POINTS)						
3.4A) RESEARCH GUIDANCE (MAXIMUM 10 POINTS)						
SN	Research Guidance	Number Enrolled	Thesis Submitted	Degree Awarded	API Score Claimed	Verified API Score
1	M. Phil /ME/ M Pharm				0	
2	MCA/M.ed/MSC				0	
3	Ph.D. or Equivalent				0	
TOTAL of 3.4A					0	0

3.4B) RESEARCH QUALIFICATION (MAXIMUM 10POINTS)					
SN	Qualification	Submitted	Awarded	API Score Claimed	API Score Claimed
1	Ph.D.	YES	YES	10	10
2	ME/M.Tech/M pharm			0	
TOTAL of 3.4B				10	10
TOTAL of 3.4				10	10

3.5) PATENT/PR (MAXIMUM 15 POINTS)						
SN	Title	REG. NO.	Submitted	Granted	API Score Claimed	Verified API Score
1	SPF5AAENGOCFR	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	10
TOTAL				15	16

CATEGORY-3	
TOTAL API SCORE CLAIMED	53
TOTAL API SCORE VERIFIED	50

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)

Mention Year of Experience in this Institute	9
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UNDERTAKING

I, **Dr. Nitin Giridhar Shinde** undertake that the information provided is correct as per records submitted by me to College/ Institute and /or documents enclosed along with the duly filled API Proforma.

Date _____ **Signature of the Teacher with Designation** _____

****Note:** The special API Score of maximum of 5 each may be awarded by principal for the following activities for reward category only. This score shall be added to the score total secured in category I -II.

1) Extra ordinary contribution beyond institution (Please mention activities for which special weight is given)

2) Overall Impression of the teacher (Like attitude, Integrity, Self discipline, Loyalty Towards Institute etc).

API GRADES TABLE AND ASSESSMENT SUMMARY

Grade shall be given according to API score as shown below.

API Category I-II-III	Grade	
≥300	O	Outstanding
275-299	A+	Excellent
250-274	A	Very Good
225-249	B+	Positively Good
200-224	B	Good
180-199	C+	Satisfactory
160-179	C	Improvement Required
<160	Not Acceptable	Not Acceptable

REMARK OF THE ASSESSMENT OFFICER:

Assessment Grade:	O (Outstanding)
-------------------	-----------------

Place _____

Date _____

Assessment officer Sign and Designation
(Chairman IQAC / HOD)

B. Implementation & Impact of faculty Appraisal system

The implementation of the Academic Performance Indicator (API) system at Institute has resulted in significant improvement in overall faculty performance and institutional quality as shown in Table 9.13.1.

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	<ul style="list-style-type: none"> Encourage leadership roles Nominate for external awards, FDPs, funded projects
A+ (Excellent)	Performance-based incentive	Certificate of Appreciation	Not Required	<ul style="list-style-type: none"> Encourage mentoring of junior faculty Support for research & innovation
A (Very Good)	Merit Certificate	Department-level appreciation	Optional (if needed)	<ul style="list-style-type: none"> Encourage improvement in research / pedagogy Recommend FDP participation
B+ (Positively Good)	No monetary reward	Appreciation letter	If required	<ul style="list-style-type: none"> Identify gaps Suggest skill up gradation & training programs
B (Good)	Not Applicable	Not Applicable	Mandatory	<ul style="list-style-type: none"> Issue advisory note Improvement plan with timelines
C+ (Satisfactory)	Not Applicable	Not Applicable	Mandatory	<ul style="list-style-type: none"> Formal counselling by HoD/Director Short-term improvement targets
C (Poor)	Not Applicable	Not Applicable	Mandatory (Intensive)	<ul style="list-style-type: none"> Written warning Monitoring for next appraisal cycle
D (Very Poor)	Not Applicable	Not Applicable	Mandatory (Critical)	<ul style="list-style-type: none"> 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

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, Comunicado, 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
9	Yoga & Fitness Awareness Camps	NSS	24-25	21/06/2025	SDG 3
10	Constitution Day	NSS	24-25	26/11/2024	SDG 16

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

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

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

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/Duration	Relevant SDG(s)
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	Apply programming concepts, algorithms, and data structures to develop data-driven software and web solutions.
PSO2	Develop intelligent solutions using machine learning, data analysis, and cloud technologies for practical problem-solving.

Declaration

The head of the institution needs to make a declaration as per the format given -

- I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines inforce as on date and the institutes hall fully abide by them.
- It is submitted that information provided in this Self Assessment Report is factually correct.
- I understand and agree that an appropriate disciplinary action against the Institute willbe initiated by the NBA. In case, any false statement/information is observed during pre-visit, visit, postvisit and subsequent to grant of accreditation.

Head of the Institute

Prof. Dr. Jayantrao Bhaurao

Name : Patil

Designation : Director

Signature :



Seal of The Institution :



Place : Shirpur

Date : 23-03-2026 12:02:54