

S.A. ENGINEERING COLLEGE, CHENNAI – 77

(Autonomous – Institute Level Research Centre, Affiliated to Anna University, Chennai)

Accredited by NAAC 'A' Grade & ISO 9001:2015 Certified Institution

The logo of S.A. Engineering College is a circular emblem. It features a green gear-like outer ring with the text 'S.A. ENGINEERING COLLEGE' in red. Inside the ring is a yellow shield with a blue cross and the words 'WISDOM' and 'HIGHER' in blue. A red banner at the bottom of the shield contains the text 'WE DESIGN YOUR TOMORROW' in white.

STRATEGIC PLAN (2025-2030)

Institutional Strategic Plan and its Effective Implementation and Monitoring

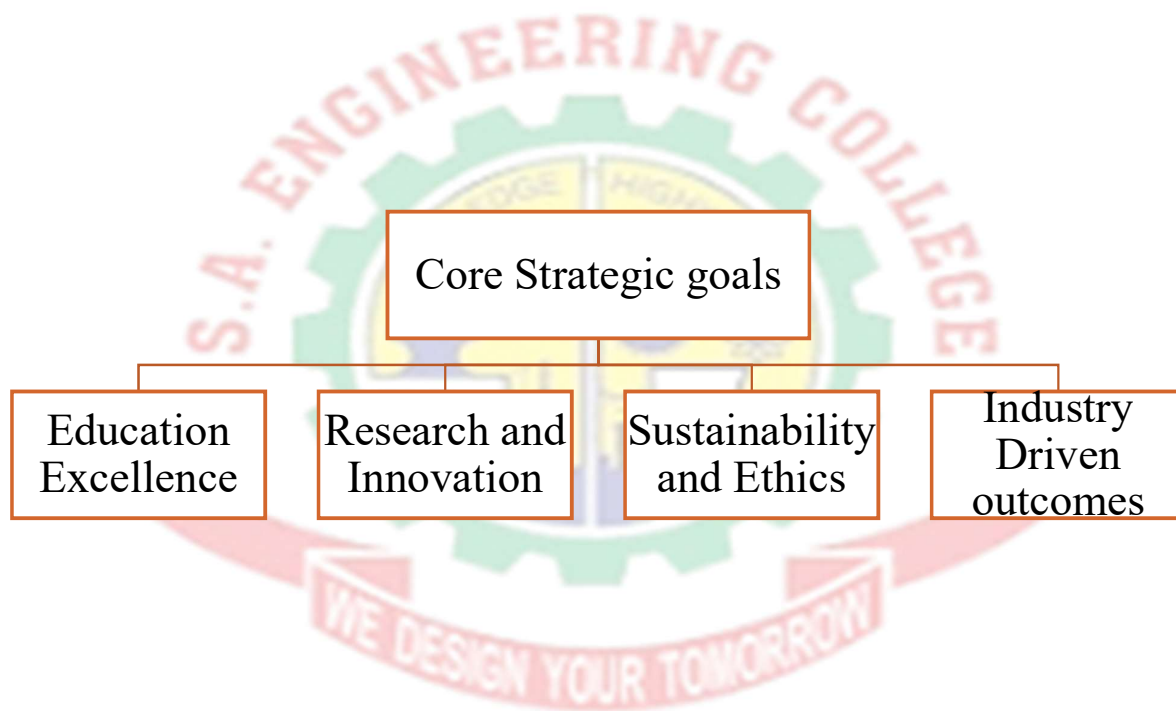
Summary

The Institutional Strategic Plan aligns with the vision and mission of S.A. Engineering College (SAEC) by focusing on educational excellence, impactful research, sustainable practices, and robust industry connections. Through effective implementation and rigorous monitoring, SAEC aims to lead in engineering and management education, driving significant contributions to society and industry.

Vision: To aspire excellence in Education and Research, in Engineering and Management, fostering conversion of knowledge, providing technologically sustainable solutions to industry and society adhering ethical values.

Mission:

1. Education:
To facilitate professional development and active learning and accelerate Engineering and Management transition to obtain admissible solutions
2. Research:
To promote innovative, resourceful techniques in Industrial collaborative research utilizing cognitive skills.
3. Sustainable Solutions:
To practice high standards of ethics and create a conducive atmosphere for multi-disciplinary sustainable solutions.
4. Industry and Society:
To provide the core concepts of industrial values nurturing Industry – Institute Collaboration for the benefit of the student community and society.



Education Excellence

ASPECT	CURRENT STATUS
Design and deliver a student-centred curriculum that fosters critical thinking and problem-solving skills.	1. Introduced specialized elective courses in emerging fields like AI and IoT to prepare students for future challenges. 2. Implemented project-based learning modules where students tackle real-world challenges, fostering critical thinking and collaborative problem-solving.
Enhance faculty development through workshops, certifications, and international collaborations.	Several initiatives have been implemented to engage faculty and improve their expertise in various fields and areas of interest.
Promote the adoption of advanced teaching methodologies and digital learning platforms.	The college has successfully reached this significant milestone and continues to advance through various initiatives. These include Faculty Development Programs (FDPs), NPTEL online courses, and a series of academic paper publications. These efforts demonstrate a commitment to enhancing knowledge and skills while contributing to the academic community.

Research and Innovation

ASPECT	CURRENT STATUS
Establish dedicated research centres and labs for interdisciplinary research.	SAEC is proud to offer: - Eight fully equipped centres of excellence focused on enhancing knowledge and innovation across various academic departments. Each centre is tailored to provide specialized resources and expertise, fostering excellence in both research and learning. - Comprehensive startup facilities and a state-of-the-art technological business incubator that nurtures aspiring entrepreneurs while fostering the development of innovative business ideas. These resources are designed to support startup ventures from inception through to launch. - The AICTE-approved IDEA lab is equipped with global certification training facilities. This environment empowers both students and faculty to conduct meaningful research in their respective fields by providing access to state-of-the-art tools and resources. Additionally, SAEC has designated areas for interdisciplinary collaborative projects, encouraging diverse teams to work together and address complex challenges from multiple perspectives.

Encourage faculty and students to undertake funded research projects and publish in reputed journals.

Faculty and talented students have engaged in a wide variety of funded research projects, receiving support from prestigious governmental institutions such as SERB, DST, DRDO, TNSC, CSIR, MNRE, BRNS, and AICTE. In the fiscal year 2021-2022, SAEC proudly secured a research grant amounting to Rs. 53,12,031. The following year, 2022-2023, funding increased to Rs. 26,07,525. We are also pleased to announce that for the academic year, 2023-2024, we have obtained a research grant totalling Rs. 2,22,197.

In addition to research initiatives, SAEC has organized a variety of enriching events, funded by both governmental and non-governmental sources. Financial support for events reached Rs. 89,90,63 in 2021-2022, followed by Rs. 2,82,500 in 2022-2023. For 2023-2024, we have received a grant of Rs. 7,72,000.

Currently around

- 103 faculty members are pursuing their Doctorates
- 82 Faculty members were with Ph.D
- 23 Faculty members were recognised as Anna University supervisors

The commitment to excellence is demonstrated by the impressive record of publishing high-quality research papers in the journals indexed

	in the Scientific Citation Index (SCI) and Scopus. The number of publications reflects our growth and dedication: the faculty of SAEC published 106 papers in 2021-2022, which increased to 158 in 2022-2023, and reached an impressive 269 in 2023-2024. So far in 2024-2025, submitted 138 additional papers, showcasing the ongoing commitment to advancing knowledge in respective fields.
Collaborate with industries and institutions for real-world problem-solving and innovation.	To date, SAEC has successfully signed approximately 11 Memoranda of Understanding (MoUs) for 2021-2022, 17 for 2022-2023, and an impressive 26 for 2023-2024. These MoUs serve as a vital bridge between education and industry, enabling us to offer valuable internship opportunities to students. Through these collaborations with industry professionals, students gain first-hand exposure to real-world challenges, allowing them to apply their academic knowledge in practical settings. Furthermore, these partnerships facilitate student participation in various enriching experiences, including conferences, workshops, and seminars. Throughout these events, industry experts provide essential insights and guidance, ensuring that the students receive comprehensive professional development that prepares them for their future careers.

Sustainability and Ethics

ASPECT	CURRENT STATUS
Embed sustainability principles across academic programs and research	The Institution integrates sustainability principles into the academic programs and research by promoting a culture of environmental stewardship, social responsibility, and innovation. This is accomplished through interdisciplinary programs that incorporate the UN Sustainable Development Goals (SDGs), raising awareness and encouraging action among both students and faculty. Research initiatives focus on sustainable solutions, supporting projects that tackle climate resilience, resource efficiency, and equitable development. Faculty and students actively collaborate with industry and government organizations to ensure the work addresses both global and local sustainability challenges, leading to tangible real-world outcomes. Looking ahead, The college plans to further enhance these efforts by introducing advanced sustainability tools and technologies, improving faculty training in SDG-related competencies, and providing more opportunities for students to participate in community-driven sustainable development projects. This comprehensive approach guarantees that academic and research

	activities align with global sustainability goals while contributing meaningfully to the creation of a sustainable future.
Foster awareness and action plans on ethical engineering practices.	Raising awareness and promoting action regarding ethical engineering practices is essential to academic and professional initiatives. The institute achieves this by integrating ethics-focused modules and case studies into engineering curricula, which helps students grasp the real-world implications of their decisions. Interactive workshops, seminars, and guest lectures from industry experts create opportunities to discuss ethical dilemmas and best practices, fostering critical thinking and responsible decision-making. Through collaborative projects, students are encouraged to address issues such as safety, sustainability, and equity in engineering solutions. Looking ahead, The college plans to strengthen these efforts by integrating emerging themes such as AI ethics, data privacy, and the role of engineering in social justice into the programs. Additionally, the college aims to establish partnerships with professional organizations and industry leaders to develop actionable ethical guidelines and mentorship opportunities. This will ensure that graduates are prepared to lead with

	integrity in a rapidly evolving engineering landscape.
Organize seminars and activities promoting sustainable solutions and societal welfare.	SAEC organizes seminars, workshops, and activities to promote sustainable solutions and enhance societal welfare, creating platforms for meaningful dialogue and innovation. These events bring together students, faculty, industry experts, and community leaders to discuss pressing global challenges such as climate change, resource conservation, and inclusive development. Through interactive sessions and hands-on activities, participants are encouraged to explore practical solutions and collaborative approaches aligned with the UN Sustainable Development Goals (SDGs). Additionally, The institute hosts hackathons and project showcases that emphasize innovations driven by sustainability. Moving forward, it aims to expand the scope and reach of these initiatives by incorporating global perspectives through international collaborations, virtual symposiums, and partnerships with organizations focused on sustainability. Its goal is to inspire action, raise awareness, and equip participants with the knowledge and skills needed to drive impactful change in their communities and beyond.

Industry-Driven Outcomes

ASPECT	CURRENT STATUS
Develop Industry-Institute Collaboration (IIC) cells for active partnership with industries	The college has established an Industry-Institute Partnership Cell (IIPC) to promote active collaborations with industries, bridging the gap between academic learning and practical applications. This cell facilitates knowledge exchange through internships, industrial training, guest lectures, and joint research initiatives. By involving industry experts in curriculum development and project mentorship, we ensure that programs stay relevant to the changing needs of the market. The IIPC also focuses on collaborative projects that address real-world challenges, promoting innovation and sustainable practices. Going forward, The college aims to strengthen these collaborations by expanding the network of industry partners, exploring co-funding opportunities for research and development, and establishing innovation hubs within the institution. These efforts will further enhance experiential learning opportunities for students, drive industry-aligned research, and contribute to building a skilled, future-ready workforce.

Facilitate internships, live projects, and skill-development programs aligning with industry needs.

SAEC actively facilitates internships, live projects, and skill development programs to bridge the gap between academic learning and industry requirements. By partnering with leading organizations, we ensure that students gain hands-on experience through internships that expose them to real-world challenges and practices.

Live projects are integrated into the curriculum, allowing students to tackle industry-relevant problems and fostering innovation and critical thinking. Skill development programs, which include technical workshops, certifications, and soft skills training, are tailored to align with emerging trends and technologies.

Looking ahead, The college plans to expand collaborations with industries, incorporate cutting-edge tools like AI and IoT into the training modules, and create a dedicated framework for placement and mentorship. These initiatives will empower students with the knowledge, skills, and confidence they need to thrive in competitive professional environments.

Conduct workshops and guest lectures by industry leaders.

SAEC regularly holds workshops and guest lectures featuring industry leaders to provide insights into the latest trends, technologies, and best practices for both students and faculty. These sessions help bridge the gap between academia and industry by fostering discussions on real-world challenges and opportunities, encouraging participants to think beyond theoretical knowledge. Industry leaders share their experiences, offering valuable perspectives on innovation, ethics, and leadership.

The workshops aim to enhance skills in emerging technologies, sustainable practices, and professional development. In the future, we plan to expand these initiatives by utilizing digital platforms to invite global experts, introducing thematic lecture series on critical industry topics, and creating follow-up projects or mentorship programs linked to these sessions. This approach will further enrich the learning experience, inspire innovation, and prepare students for leadership roles in their respective fields.

Technology Business Incubator

An institutional setup designed to nurture and support the growth of technology-based startup companies during their early and most vulnerable stages. It provides a supportive

ecosystem combining infrastructure, mentoring, funding access, networking, and business services to help innovators transform their ideas into viable products or businesses.

Applied to get TBI it is in Process



Monitoring and Evaluation

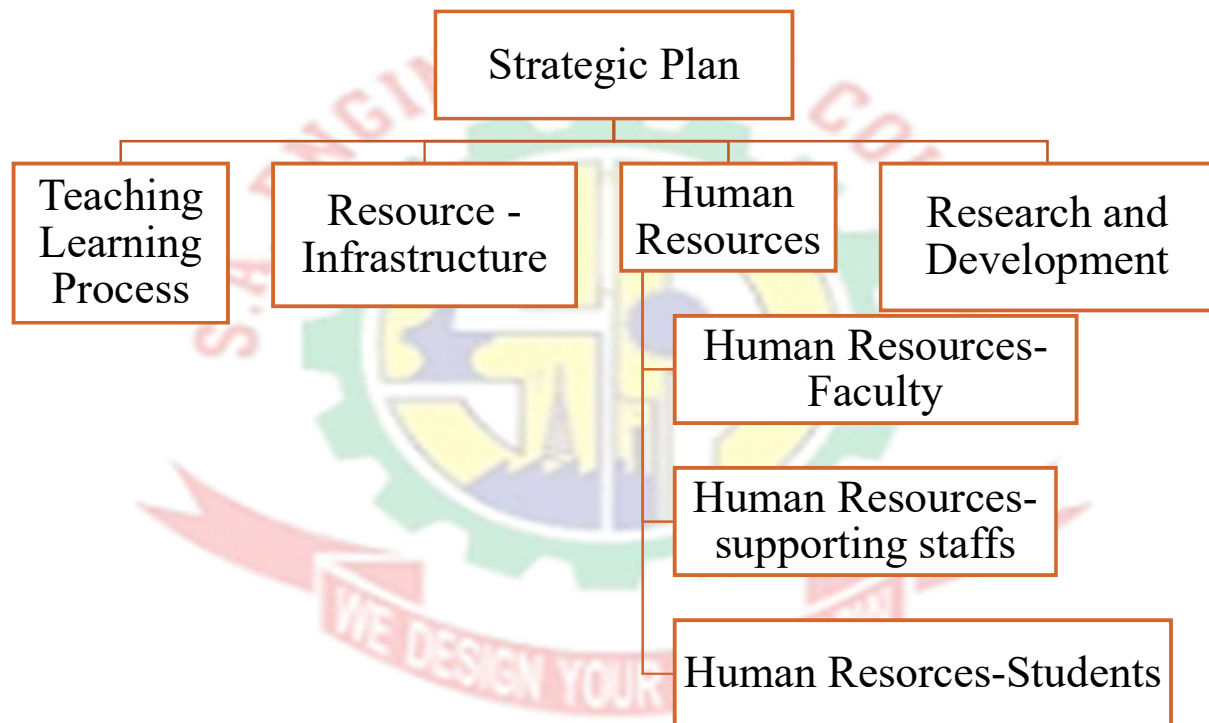
SAEC uses Key Performance Indicators (KPIs) to track progress:

- Education: Student performance, faculty feedback, and placement statistics.
- Research: Number of publications, patents filed, and funded projects.
- Sustainability: Implementation of green initiatives and ethical practices.
- Industry Collaboration: Industry partnerships, internships offered, and placement success rates.
- Conduct quarterly and annual reviews to assess outcomes and recalibrate strategies.
- Collect feedback from stakeholders—students, faculty, industry partners, and society—to refine goals.

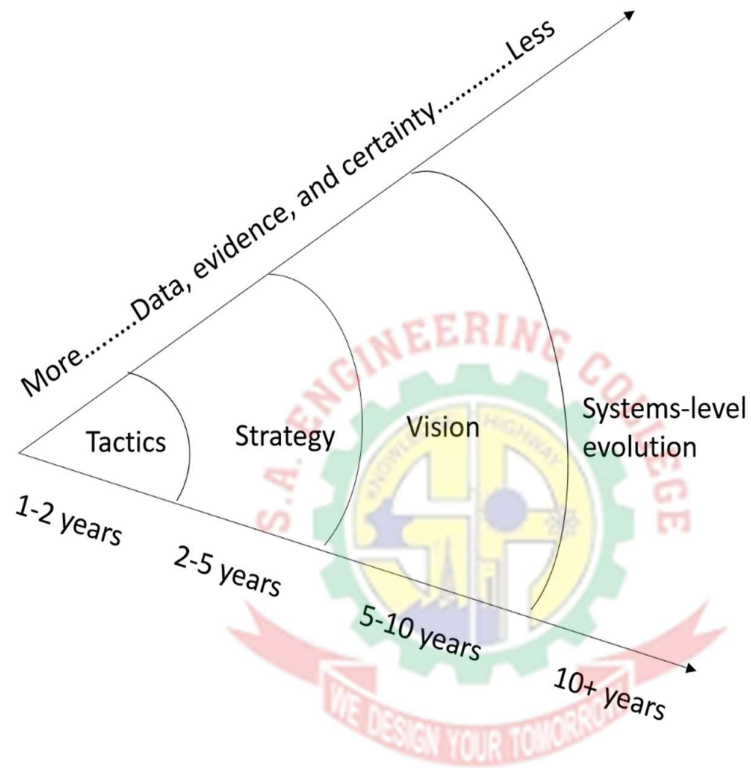
Key Success Factors

- Strong leadership commitment and vision alignment.
- Active involvement of all stakeholders in planning and implementation.
- Continuous learning and adaptation based on feedback and emerging trends.
- Effective communication and collaboration across all levels.

Strategic Plan



Strategic Plan for 2025-30



Education, Technology, Ethics, Skilled Labor and Customer centric dimensions are crucial for sustainable growth and development of industries.

We intend to identify the requisite skills for the companies and train the students specifically for placements

Hence students and Faculty will be trained in the following ways, with the skill of data analytics and Artificial Intelligence.

Teaching Learning Process

S.No	Goal	Strategy	Expected Outcome
1	Introducing Innovative Teaching Methods	Design thinking/case study, Flipped Classroom, Practical oriented learning etc	At least one activity per course
2	Developing e-content to encourage self learning aspects	Developing videos, eBooks, quizzes, webinars, and case studies.	At least two e-contents per department
3	Developing Virtual Labs	Training to be given for developing virtual lab Contents	At least one lab per department
4	Enhancing multi-disciplinary approach in teaching	Promoting multidisciplinary projects.	One multidisciplinary project per student during 2nd or 3rd semester
5	Providing personal and career mentoring to students	Enhancing mentoring activities	For Bright students - At least 2 times per semester for their Career Guidance For Weak students - coaching was provided

6	Promoting Technology Assisted self-learning	1. Encouraging students to undertake more online courses through self-study	At least 4 courses per years
7	Converting Projects into Papers/ products/patents	2. Encouraging students to convert projects to papers /products/patents	In each department: 80% - academic projects to papers. 15% - projects to products 5% - projects to patents



Resources – Infrastructure

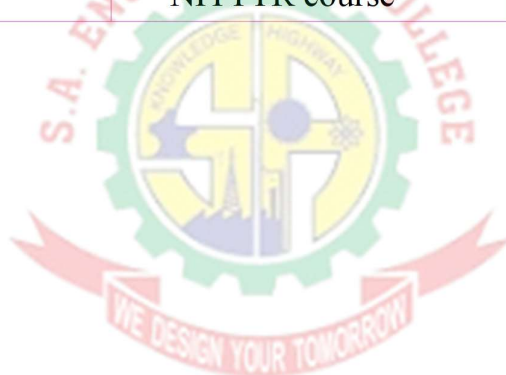
S.No	Goal	Strategy	Expected Outcome
1	Laboratory upgradation	Purchase of new equipment as per syllabus	At least 5 new equipment per department every year
2	Improvement in Computing Facility	● Implementing the Bring Your Own Device (BYOD) concept ● Providing new centralized server for MBA software with a central storage facility for all students and faculty members	● Each student should possess a laptop. ● Anyone laboratory course per department should be conducted using this centralized server facility
3	Creating smart class rooms/studios	A recording facility may be created in each classroom to enhance e-content development	● One well-equipped studio for college ● At least for one course, the entire e-content is to be developed per semester in each department
4	Creating Teaching & Learning resource repository	Developing an e-learning resource repository consisting of PPTs, Videos, short summaries, formulas, and Q-banks prepared/compiled by faculty members etc and to be kept for free access to students.	A repository for every subject should be created in each department
5	Creating centralized e-data management system for the institution	Providing a separate server for the data management system for faculty and students	All the student and faculty details should be available and accessible to everyone from the centralized server.

6	Creation of Continuing Education cell	● To organize brainstorming Lectures and motivate faculty and students towards continuous learning ● To create a platform for offering online courses in NPTEL, Coursera, Udemy etc by the faculty	● At least four programmes per department in a year ● At least one online course per department is to be offered in a year
7	Upgradation of Sports infrastructure facilities	● Upgrading the Basketball & Badminton courts with synthetic flooring and providing a systematic training program. ● Establish new play facilities in hostels ● Up-gradation of the gym facilities, organize fitness camp and seminars ● Focusing on sports quota admission	Minimum 10% increase in overall participation of the students and achievements every year
8	Improvement in Library automation services & infrastructure	● Establishing an RFID-based Library Management System. ● To implement software tools, so that the available e-resources can be accessed remotely.	● Minimum 20% increase in library access by students and faculty every year ● Minimum 20% increase in the purchase of books every year.

Human Resources – Faculty

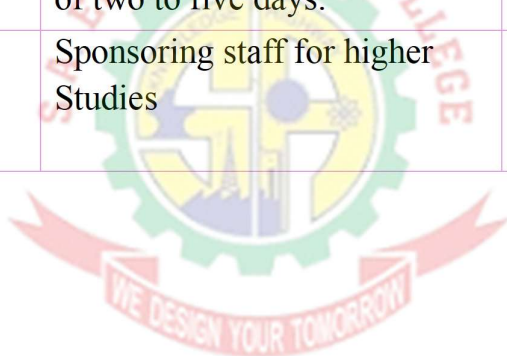
S.No	Goal	Strategy	Expected Outcome
1	Faculty retention	• Incentives. • Appreciations for continuous services and R and D performance. • Wards of the faculty are provided with concessions in schools • Faculty are relieved one day from their regular classes to perform their research.	Minimum 1 Professor, 2 Associate Professors and 2 Assistant professors in every department.
2	Faculty-student ratio	Recruiting faculty members to meet the ratio	AICTE and NBA norms to be met.
3	Faculty Professional skill development	• Online course completion participation in FDP (more than 5 days) • Outside world Interactions: Participation in conferences/ workshops/ seminars acting as resource person- expert lecturer, Chief Guest, chairperson, BOS member, etc • Faculty Exchange Program - National /	• For FDP: At least 50% of faculty per department in a year • For Outside-world interaction: At least one faculty per year at the department level • For Faculty Exchange Program: Minimum 4 activities per department in a year

		International levels Organizing FDPs/ Seminars/Conference Sponsored/self- supporting and professional society activities	
4	Faculty Induction and Pedagogical programme	● Training for faculty with less than two years of experience. ● Refresher Workshop for faculty with two-to-five-year experience ● Encourage fresh faculty to complete NITTTR course	● Minimum one activity at the institutional level per year ● Fresh faculty has to complete 8 courses within 2 years



Human Resources - Supporting Staff

S.No	Goal	Strategy	Expected Outcome
1	Retention	● Reward and recognition are to be given every year based on performance. ● Wards are given with concession in the school run by the trust.	The average period of experience of a staff member in every department should be a minimum of 10 years.
2	Skill upgradation	Sponsoring staff to participate in skill development programmes with a minimum of two to five days.	50% of the staff in each year
3	Qualification upgradation	Sponsoring staff for higher Studies	At least 10% of the staff in institutional level



Human Resources - Students

S.No	Goal	Strategy	Expected Outcome
1	Student diversity	Organizing a national-level competition and promoting it in other states.	20% from other states
2	Quality Placements	- Conduct core software training programs. - Introduce regular one-credit courses focused on the development of soft skills. - Offer value-added one-credit courses. - Implement comprehensive tests and viva examinations in the second semester. - Identify and invite more reputable companies for placements.	-Every student must attend a minimum of 2 programmes per department. -Increase institutional level/departmental level placement to 85% -Increase the average salary by 5% every year
3	Student Participation in Innovation programmes	Engaging students to develop innovative projects by providing funding support, organizing exhibitions, and hosting hackathons.	-Minimum 5 projects per department to be scaled up. -Minimum one project per student to be exhibited
4	Competitive examination and Higher studies	Conducting awareness/ training programmes	At least 30% of students should participate in competitive examinations, with a minimum percentage success rate of 10%.
5	Entrepreneurship development/ Promoting Startup	Entrepreneurship development/ Promoting Startup	At least two per year

6	Industrial Visit, Guest Lecture, Value Added Courses, Internship, Industrial Training and online courses.	Conducting awareness programs for students through Industrial Visits, Guest Lectures, Value-Added Courses, and Internships for management decision-makers as part of the college's autonomy policy.	At least two per year
7	Case Study, Workshop, IIC, Conferences	Engage students to develop case studies, arrange workshops, and participate in IIC programs and conferences as part of the content beyond syllabus policy.	At least two per year



Research and Development

S.No	Goal	Strategy	Expected Outcome
1	R&D Grants received	Focus more on -Multi-disciplinary research. -Funding should be obtained from International/National/Governmental/Non-Governmental and funding agencies. -Every faculty member with a Ph.D. qualification shall apply for a minimum of one funded research project per year	Funding per year from external funding agency should be increased
2	Publication (Journals and Books)	-Publication of research work in Science Citation Index (SCI)/Scopus Journal -Faculty members are appreciated with appropriate monetary incentives for their Web of Science/Scopus indexed journal publications -Faculty members are motivated to write books and publish with renowned publishers.	Average of one paper per faculty in SCI/Scopus journals.
3	Improvement of Citation Index	-Faculty members should utilize either Urkund/ Turnitin-Authenticate plagiarism software before submitting the research papers/ project proposals and their similarity index should be less than 15%. -Quality publications will enhance the citation index. -	Average Scopus-indexed citations should cross 4 per paper for the last 3 years publications.

		Incentives can be provided for publications with high citations.	
4	Joint/Collaborative Research	The Institute encourages faculty members to establish networks with other higher institutions of learning and research organizations within India and abroad and go for MOU Registration Fees, travel, boarding and lodging expenses to participate in conferences/ workshops/ seminars and other professional development activities that have to be provided by the Institution partly.	Collaborative / joint research projects with lead institutions / R&D laboratories/industries.
5	NIRF Ranking	The institute aims to secure a position in the National Institutional Ranking Framework (NIRF) by continuously enhancing its academic quality, research output, innovation ecosystem, and overall institutional performance. Strategic initiatives are being implemented to strengthen teaching-learning practices, research collaborations, industry engagement, and student outcomes in alignment with NIRF parameters.	The expected outcomes include enhanced research productivity, improved teaching-learning quality, establishment of innovation and incubation facilities, strengthened industry-academia linkages, and higher student employability—culminating in recognition through a competitive NIRF ranking.