# Vel Tech Multi Tech

Dr.Rangarajan Dr.Sakunthala Engineering College

An Autonomous Institution

# STRATEGIC PLAN

## Substantiating the Path Ahead

The path ahead for an engineering institution hinges on leveraging its strengths in education, research, and collaboration to address global challenges and drive innovation. By modernizing curricula to align with emerging technologies, fostering interdisciplinary research, and partnering with industries, the institution can remain at the forefront of technological advancements. Expanding international collaborations will enhance global exposure, while community engagement initiatives will solidify its role as a societal leader. Infrastructure investments in smart and sustainable technologies will create a forward-thinking campus, embodying the institution's commitment to environmental stewardship. These efforts, guided by a robust governance framework and measurable KPIs, will ensure the institution's continued relevance and leadership in shaping the engineers and solutions of tomorrow.

## Strategic Plan of VTMT

The strategic plan of the institution focuses on creating a transformative impact through excellence in education, research, and societal engagement. It outlines key priorities, including curriculum modernization, interdisciplinary research and global collaborations, to address emerging technological and societal challenges. By fostering strong industry partnerships, promoting innovation and entrepreneurship, and embracing smart and sustainable infrastructure, the institution aims to equip students and faculty with the tools to lead in a dynamic global landscape. Guided by measurable goals and robust governance, this plan ensures long-term relevance, sustainability, and leadership in engineering education and innovation.

## Glimpse of the Strategic Plan

The institution aims to pioneer transformative advancements in education and research by focusing on innovation, collaboration, and societal impact. By updating curricula to include emerging fields like AI, renewable energy, and robotics, the institution will prepare students for dynamic global challenges. Robust research ecosystems, interdisciplinary programs, and partnerships with industry leaders will foster a culture of innovation. Initiatives like innovation hubs and sustainable infrastructure will solidify the institution's leadership in engineering education. The plan, underpinned by a strong governance framework and strategic KPIs, positions the institution for global recognition and long-term societal contributions.

## Vision

- Elevating well-being of humanity by augmenting human resource potential through quality technical education and training.

## Mission

- To effectuate supremacy in technical education through articulation of research and industry practices for social relevance.
- To inculcate the habit of lifelong learning.
- To exhibit professional ethics, commitment and leadership qualities.

## Goals and Objectives

- TransformTeaching/Learningprocessfocusingonoutcome-basedEducation
- Developandnurtureadiverseeducational andprofessionalenvironment.
- Promoteinnovationbyprovidingstateofartfacility
- Fostercollaborationwithcommunityorganizationsthroughfacultyandstudentengagement.
- Planforfutureexpansionthroughupgradationofinfrastructureandotheramenities
- Developtheinstituteasa CentreofExcellence.

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Vel Trust (1997, the Trust founded by the Educational-Philanthropic Personalities, Col.Prof.Vel.Dr.R.Rangarajan and Dr.Mrs.Sakunthala Rangarajan, the Founder President and the Foundress President respectively, promoted the erstwhile Vel Tech Multi Tech Dr.Rangarajan Dr.Sakunthala Engineering College popularly known as Vel Tech Multi Tech in 1999 with the vision to provide right environment for technology transformation to the young minds.

The Institution has been consistent in maintaining excellence in the academic standards, research, reputation, recognition and professionalism since its inception and is known for its highest credentials in Teaching, Learning, Research, Innovation and extension activities. With an optimal blend of theory and practice, it offers 9 courses in Engineering & Technology and 2 Post Graduate courses, leading to the award of B.E, B.Tech and M.E Degrees of Anna University, Chennai.

The institution excels as one of the top premiere institutes in India owing to its State-of-the art Infrastructure, well equipped laboratories and highly qualified and experienced faculty members. The campus is extended over an area of 35 acres of lush greenery campus and the Institute is imaginatively laid-out with picturesque landscape. The instructional buildings include departments, a central library, common amenities and student's hostels with the walking distance from Institute.

The sprawling campus with state-of-the-art laboratories cultivates good character and ethics.

The institution has been strengthened by its passionate and research focused faculty members with a strong support from eminent industry experts, corporate, scientists, academicians and management consultants for training and recruiting fresh and young talents nurtured in the institution. In a world increasingly propelled by technology, research is the foundation of any growth. The Institution is committed to a long term research and development to innovate technologies for the future. The institution has till date completed projects to the tune of Rs.4.5 crores and running projects to the tune of 1.5 crores. We are recognized as Institution level Research Centre by Anna University, all the programs run by the institution are approved Research centres of Anna University for carrying out PhD work.

The Institution has been accredited by NAAC Accredited with 'A' grade with an impressive score of 3.49 / 4.0. The Departments of Biomedical Engineering, Computer Science and Engineering, Electronics and Communication Engineering, Electrical and Electronics Engineering, Mechanical Engineering and Information Technology are NBA accreditated. The institution's ranking in the NIRF Innovation category under the Band 151-300 in the year 2023, is another milestone to its feathers in addition to the 2F & 12B status of UGC, New Delhi.

The number of Publications by the faculty members in the last 5 years has been highly commendable. We have 1850+ publications in SCOPUS/Peer-Reviewed Journals and more than 2500+ in other reputed National /International journals. The

Institution has 247 Patents Filed, of which 227 are Published and 37 Patents are granted. Vel Tech Multi Tech Dr. Rangarajan Dr. Sakunthala Engineering College was awarded as the NUMBER ONE College in Tamil Nadu among 481 colleges in the year 2018 by Anna University for the above herculean success created by the Institution in Patents.

The Institution has 80% Placement record consecutively for the last 5 years with a highest salary of 10 Lakhs/annum. The Higher studies has also one of the successful platform that has proved great success for the Institution. Focus on Inter-Disciplinary and Multi-Disciplinary programs along with industry oriented online courses, development of effective curriculum to cater to the industry needs in consonance with NEP, facilitating industrial internships for enhancing industry-readiness and employability of students are the visionary strategic plans of the institution.

# Indian Scenario in Engineering Education

1. **Current Landscape**
    - Statistics on the number of engineering institutions, students enrolled, and graduates annually.
    - Regional diversity in engineering education.
    - The prominence of technical institutions like IITs, NITs, and private universities.
2. **Strengths**
    - High enrolment rates and wide accessibility.
    - Strong technical foundations established in prestigious institutions.
    - Government initiatives such as Skill India and Make in India bolstering technical education.
3. **Challenges**
    - Skill gaps between education and industry requirements.
    - Over-saturation in certain streams (e.g., IT and computer sciences).
    - Quality disparities between institutions.
    - Lack of adequate focus on research and innovation.
4. **Emerging Trends**
    - Integration of AI, IoT, and sustainability in curricula.
    - Increased focus on internships, projects, and hands-on learning.
    - Growth in entrepreneurship and start-up culture among graduates.
5. **Government Policies and Support**
    - Reforms under the National Education Policy (NEP) 2020.
    - Initiatives for digital learning and technology integration.
    - Focus on accreditation and global standards.
6. **Future Outlook**
    - The shift toward interdisciplinary and industry-relevant education.
    - Leveraging India's demographic dividend through skill-oriented engineering education.

## Key Highlights of NEP 2020

1. **School Education**
    - **5+3+3+4 Structure:** Replaces the 10+2 system with a flexible structure for foundational, preparatory, middle, and secondary stages, covering ages 3-18.
    - **Focus on Early Childhood Care and Education (ECCE):** Universal access to quality preschool education by 2030.
    - **Holistic Development:** Emphasis on critical thinking, creativity, and foundational literacy and numeracy.
    - **Reduced Curriculum Content:** Focus on core concepts and hands-on learning.
    - **Multilingual Education:** Teaching up to Grade 5 in the mother tongue/regional language wherever possible.
2. **Higher Education**
    - **Flexible Curricula and Choice-Based Learning:** Multidisciplinary programs with multiple entry and exit points.
    - **Undergraduate Programs:** Choice of 3- or 4-year courses with certification at different levels (certificate, diploma, degree).
    - **Academic Bank of Credits:** Digital repository for credit storage and transfer.
    - **Single Regulatory Body:** Establishment of the Higher Education Commission of India (HECI).
    - **Phasing Out Affiliation System:** Autonomous degree-granting colleges to replace affiliated institutions.
    - **Target GER:** Increase Gross Enrolment Ratio to 50% by 2035.

3. **Vocational and Skill-Based Education**
    - Integration of vocational education from Grade 6.
    - Mandatory internships and hands-on training.
4. **Teacher Training and Development**
    - Strengthening teacher education through 4-year integrated B.Ed. programs.
    - Performance-based career progression and continuous professional development.
5. **Technology in Education**
    - Establishment of the National Educational Technology Forum (NETF).
    - Increased use of AI and digital tools in teaching and learning.
6. **Inclusive Education**
    - Focus on disadvantaged groups (Diverse gender identities, socio-economic backgrounds, and disabilities).
    - National Institute for Pali, Persian, and Prakrit languages.
7. **Research and Innovation**
    - Creation of the National Research Foundation (NRF) to promote high-quality research in universities.
8. **Governance and Policy Reforms**
    - Light but tight regulation to ensure transparency and accountability.
    - Emphasis on autonomy for institutions and faculty.
9. **Promoting Indian Knowledge Systems**
    - Inclusion of traditional and indigenous knowledge in curricula.
    - Strengthening Sanskrit and other Indian languages.
10. **Globalization and Internationalization**

- Collaboration with global institutions for exchange programs and research.
- Allowing foreign universities to operate in India.

## Institutional SWOC Analysis

Strengths:

- ICTenabledteachinglearningprocess
- SponsoredResearch
- ConsultancyProjects
- Well-equippedDigitalLibrary
- IndustryCollaborations
- Publicationsinrenowned journals
- BeyondSyllabusActivities
- AcademicAuditprocess forqualityassurance
- InstitutionalandDepartmentalCommitteesforworkingtowardsexcellenceineducation

Weaknesses:

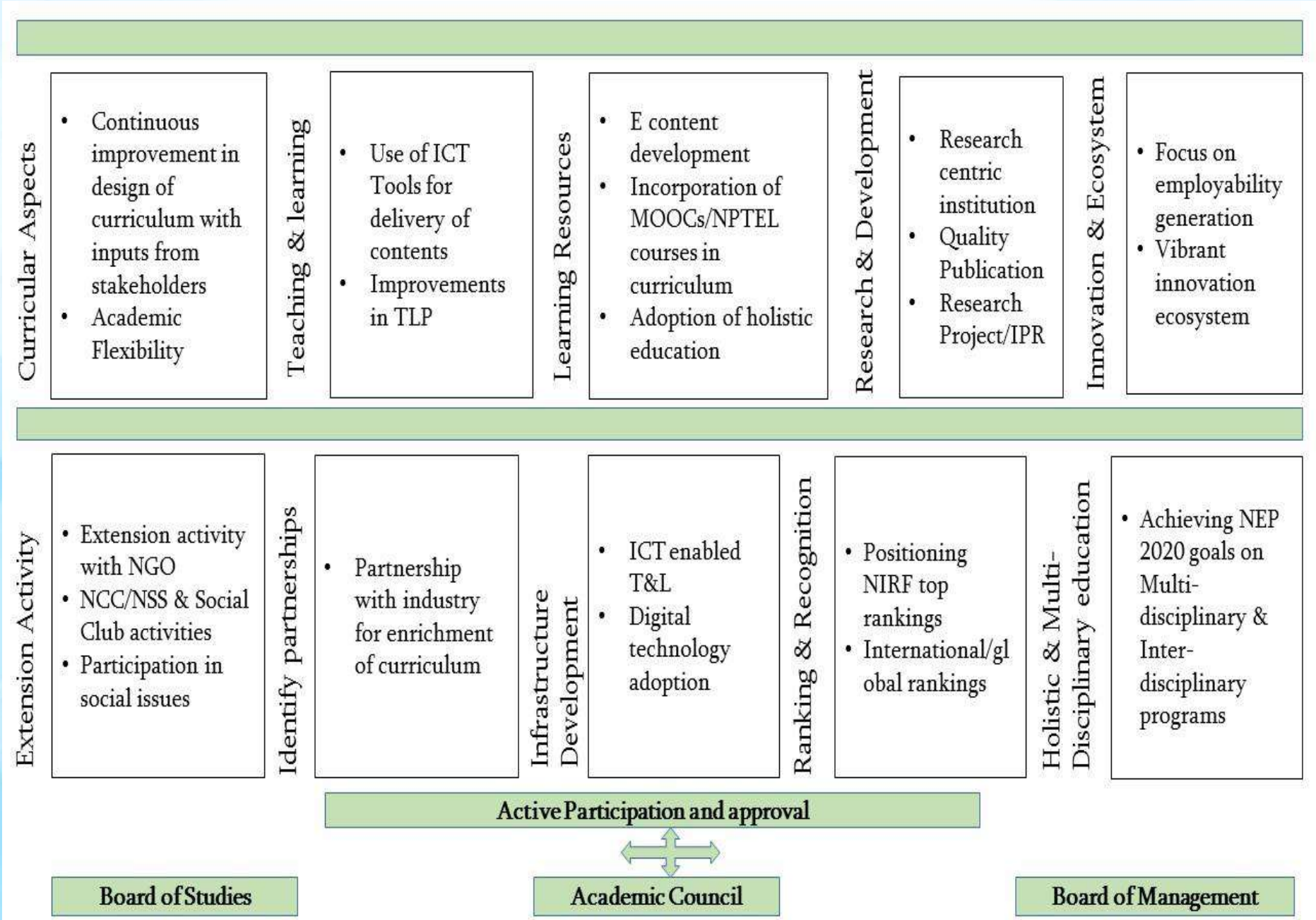
- MinimumnumberoffacultyPhD.Holders
- Internationalengagementofstudent–facultyexchangeprogramme

Opportunities:

- PrototypingLaboratory
- Internationalcollaborations
- AcademicAutonomy
- Contributiontowardssustainabledevelopmentofthesociety
- InstitutionalSocialResponsibility
- Expansionofresearchprograms

Challenges:

- ChangeinadmissionscenarioinEngineering
- ImplementationofNEP2020
- Unpredictableplacementscenario
- Availabilityofcompetent Ph.D.faculty


Curricular Aspects
• Continuous improvement in design of curriculum with inputs from stakeholders
• Academic Flexibility
Teaching & learning
• Use of ICT Tools for delivery of contents
• Improvements in TLP
Learning Resources
• E content development
• Incorporation of MOOCs/NPTEL courses in curriculum
• Adoption of holistic education
Research & Development
• Research centric institution
• Quality Publication
• Research Project/IPR
Innovation & Ecosystem
• Focus on employability generation
• Vibrant innovation ecosystem
Extension Activity
• Extension activity with NGO
• NCC/NSS & Social Club activities
• Participation in social issues
Identify partnerships
• Partnership with industry for enrichment of curriculum
Infrastructure Development
• ICT enabled T&L
• Digital technology adoption
Ranking & Recognition
• Positioning NIRF top rankings
• International/global rankings
Holistic & Multi-Disciplinary education
• Achieving NEP 2020 goals on Multi-disciplinary & Inter-disciplinary programs
Active Participation and approval
Board of Studies
Academic Council
Board of Management

# VISION 2026

## 1. Vision and Mission

- **Vision:** To be a global leader in engineering education and research, driving technological innovations and fostering societal impact.
- **Mission:** To provide transformative education, conduct cutting-edge research, and collaborate with industry and society to address real-world challenges.

## 2. Strategic Pillars

*A. Academic Excellence*

1. **Curriculum Aspects**:
    - To focus on continuous improvement in design of curriculum with inputs from Stakeholders.
    - To regularly update curricula to incorporate emerging fields like AI, renewable energy, IoT, robotics, and sustainability.
    - To establish academic flexibility.
    - To emphasize experiential learning, project-based education, and interdisciplinary approaches.
2. **Teaching and Learning**:
    - To incorporate the use of ICT Tools for delivery of content.
    - To enhance soft skills, leadership, and teamwork training alongside technical expertise.
    - To foster a culture of teaching innovation and global exposure.
    - To emphasize on the improvement in TLP

3. **Learning Resources**:
    - To develop e-content for all courses.
    - To incorporate MOOCs/NPTEL courses in curriculum.
    - To introduce the adoption of holistic education.

*B. Research and Innovation*

1. **Focused Research Areas**:
    - To establish as a research centric institution
    - To focus on Quality publications
    - To identify strategic research domains addressing global and regional needs.
    - To promote multidisciplinary research and collaboration.
    - To develop state-of-the-art labs, centers of excellence, and advanced computing facilities
    - To establish strong ties with government agencies, industries, and international organizations for research funding
2. **Innovation & Ecosystem**:
    - To encourage technology transfer and commercialization of research outputs.
    - To support faculty and student-led research initiatives.
    - To focus on employability generation
    - To generate a vibrant innovative ecosystem

*C. Industry Collaboration*

1. **Partnership Programs**:
    - Build partnerships for internships, collaborative projects, and curriculum co-development.

- Establish industry advisory boards for curriculum alignment with market needs.

2. **Continuing Education**:
   - Offer professional certification programs, executive courses, and lifelong learning opportunities.
3. **Innovation and Entrepreneurship**:
   - Establish innovation hubs and incubators to support startups and foster entrepreneurship.
   - Facilitate patent filing and intellectual property development.

*D. Community and Societal Engagement*

1. **Social Impact Initiatives**:
   - To promote extension activities with NGO.
   - To encourage students of NCC/NSS & social clubs activities to participate in social issues.
   - To promote campus-wide sustainability practices.
2. **Outreach Programs**:
   - Conduct STEM education outreach for underrepresented and underserved communities.
   - To encourage diversity and inclusion within the student body and faculty.

*E. Infrastructure and Sustainability*

1. **Smart Campus Development**:
   - Develop sustainable and smart infrastructure incorporating renewable energy, green buildings, and digital systems.
   - Leverage IoT and data analytics for campus management.
   -

2. **Technology Integration**:
    - Enhance digital learning platforms and use emerging technologies like virtual and augmented reality in teaching, ICT enabled teaching learning process.

*F. Branding and Communication:*

- Strengthen the institution's brand by showcasing its innovations, achievements, and societal contributions.
- Use digital platforms for outreach, marketing, and alumni engagement.

*G. Ranking and Recognitions*:

- To position the institution in NIRF Top rankings
- To participate in international & global rankings pertaining to academic excellence

*H. Implementation and Governance*

*Governance Framework*

- To create specialized committees and task forces to oversee strategic initiatives.

*Timeline and Milestones*

- Short-term (1-2 years): Establish governance, initiate key projects, and secure partnerships.
- Mid-term (3-5 years): Expand research output, global collaborations, and infrastructure improvements.

- Long-term (5-10 years): Achieve global recognition and substantial societal impact.

*Monitoring and Feedback*

- Define Key Performance Indicators (KPIs) for tracking progress, such as employability rates, research output, and industry collaborations.
- To regularly review and adapt strategies based on stakeholder feedback.

# Strategic Plan of the institution

| S.NO | Description | Goal |
|---|---|---|
| 1 | Improving Academic Quality | To improve the academic quality of the institution by increasing the number of accredited programs and improving student outcomes |

| Objective | Metrics |
|---|---|
| Increase the number of accredited programs from 50% to 80% within the next 3 years under Tier I. | Accreditation status of programs |
| Improve student pass percentage in university exams from 85% to 95% within the next 2 years. | Student pass percentage in university exams |
| Increase the number of research papers published by faculty members from 150 to 250 per year. | Number of research papers published by faculty members |

| S.NO | Description | Goal |
|---|---|---|
| 2 | Enhancing Research and Innovation | To institution as a hub for research and innovation in establish the engineering and technology. |

| Objective | Metrics |
|---|---|
| Increase the number of research projects funded by external agencies from 1L to 10L per year. | Number of research projects funded by external agencies |
| Establish new research centers within the next 3 years. | Number of research centers and laboratories established |
| Increase the number of patents published/granted by faculty members and students from 2 to 10 per year. | Number of patents filed by faculty members and students |
| Increase the number of citations and h-index year-on-year for the next 3 years. | Number of citation per year and h-index per year |

| S.NO | Description | Goal |
|---|---|---|
| 3 | Strengthening Industry Partnerships | To strengthen industry partnerships and collaborations to improve the employability of graduates and promote research and innovation. |

| Objective | Metrics |
|---|---|
| Increase the number of industry partnerships from 5 to 15 within the next 3 years. | Number of industry partnerships |
| Establish 5 new industry-funded research projects within the next 3 years. | Number of industry-funded research projects |
| Increase the number of students placed in industry jobs from 80% to 90% within the next 2 years. | Percentage of students placed in industry jobs |

| S.NO | Description | Goal |
|---|---|---|
| 4 | Improving Infrastructure and Facilities | To improve the infrastructure and facilities of the institution to provide a world-class learning environment for students. |

| Objective | Metrics |
|---|---|
| Increase the number of ICT facilities in all classrooms within the next 3 years. | Number of classrooms and laboratories |
| Enhance the Library Infra structure with latest and well-equipped e-resources within the next 3 years. | Number of books and journals in the library |
| Improve the internet bandwidth and connectivity to 1 Gbps within the next year. | Internet bandwidth and connectivity |

| S.NO | Description | Goal |
|---|---|---|
| 5 | Enhancing Student Life and Experience | To enhance the student life and experience by providing a range of extracurricular activities, sports, and cultural events. |

| Objective | Metrics |
|---|---|
| Increase the number of student clubs and organizations from 2 to 10 within the next 3 years. | Number of student clubs and organizations |
| Encouragement of students to participate and win awards in sports, cultural are within the next 3 years. | Number of students participated & won awards in sports, culturals& others. |
| Increase the number of cultural events and festivals from 3 to 10 per year. | Number of cultural events and festivals |

| S.NO | Description | Goal |
|---|---|---|
| 6 | Faculty Development and Training | To enhance educators' knowledge, skills, and teaching effectiveness, fostering continuous professional growth to improve student learning outcomes and support institutional excellence |

| Objective | Metrics |
|---|---|
| Increase in the number of faculty members attending national and international conferences from 20% to 50%in next 3 years. | Number of Faculty members attended national and international conferences |
| Increase in the number of faculty members attending FDPs from 20% to 50% in next 3 years. | Number of faculty members attended FDPs |
| Increase in the number of faculty members with PhD qualifications from 25% to 60%. | Number of faculty members with Ph.D qualification. |

| S.NO | Description | Goal |
|---|---|---|
| 7 | Quality Assurance and Accreditation | To ensure that the programs meet established standards of excellence, fostering continuous improvement in teaching, learning, and outcomes to enhance institutional credibility and student success |

| Objective | Metrics |
|---|---|
| Successful completion of the accreditation process for all the eligible programs. | Number of programs accreditated |
| Establishment of a quality assurance cell, focusing on internal quality audits and assessments. | Establishment of IQAC as per the guidelines with frequent meetings conducted |
| Participation in quality audits conducted by external agencies | No of audits conducted and awarded |

| S.NO | Description | Goal |
|---|---|---|
| 8 | Student Feedback and Grievance Redressal | To provide a structured platform for students to voice concerns, offer constructive feedback, and resolve issues effectively, ensuring a supportive and responsive academic environment |

| Objective | Metrics |
|---|---|
| Establishment of a student feedback system, focusing on teaching-learning and infrastructure. | Availability of student feedback system in website and manual |
| Increase in the number of student grievances addressed from 90% to 95%. | Number of student grievances addressed. |
| Establishment of a student grievance redressal committee, focusing on timely and effective resolution of grievances. | Availability of student grievance, sparsh, as per UGC guidelines |

| S.NO | Description | Goal |
|---|---|---|
| 9 | Alumni Engagement and Networking | To foster long-term, mutually beneficial relationships between alumni and their alma mater, facilitating professional growth, knowledge sharing, and support for current students and the institution |

| Objective | Metrics |
|---|---|
| Increase in the number of alumni events and reunions from 1 to 2 per year. | No of alumni events conducted in a year |
| Establishment of an alumni association, focusing on networking and career development. | Alumni association status and events on networking alumni |
| Involve alumni in department events as speakers/guests/jury members for events | No of events where alumni has been invited to be a part of the program. |

| S.NO | Description | Goal |
|---|---|---|
| 10 | Community Engagement and Outreach | To build meaningful relationships, foster collaboration, and address the needs of diverse communities through active involvement, education, and shared resources for mutual growth and impact |

| Objective | Metrics |
|---|---|
| Increase in the number of community outreach programs from 5 to 7 per year. | Number of community outreach Programs conducted |
| Establishment of a community engagement cell, focusing on social responsibility and outreach. | Number of community engagement cell was establishment |
| Increase in the number of partnerships with local industries and organizations from 0 to 6. | Number of partnerships with local industries and organizations |

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