

PANIMALAR

ENGINEERING COLLEGE

(AN AUTONOMOUS INSTITUTION)

Chennai, Tamil Nadu - 600123



Institutional Development Plan (IDP)
2025 - 2030



PANIMALAR ENGINEERING COLLEGE

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INSTITUTIONAL DEVELOPMENT PLAN (IDP)

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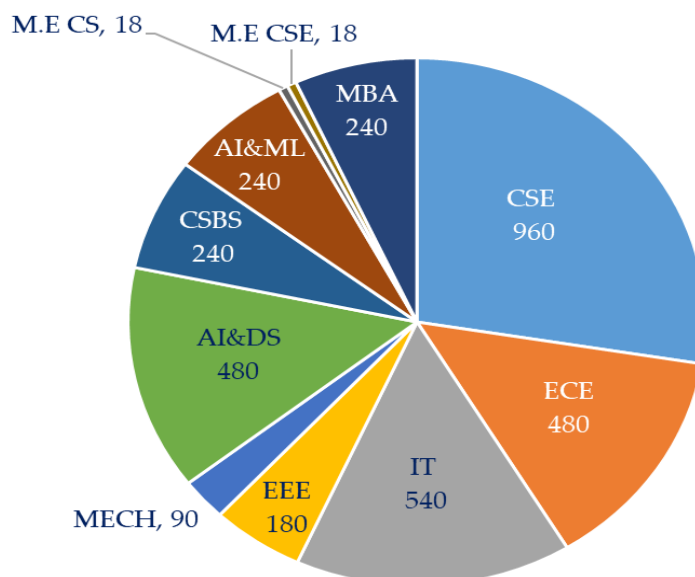
1. About the Institution

Panimalar Engineering College, a pioneer in professional education is run by the JAISAKTHI Educational Trust with a vision to impart high-quality technical education to aspiring youth. Established in 2000 in alignment with the Government of Tamil Nadu's policy to promote engineering education, the institution is affiliated with Anna University, Chennai, and approved by the All India Council for Technical Education (AICTE), New Delhi. The college has earned recognition from the UGC under sections 12(B) and 2(f), and was granted autonomous status in 2020–2021.

Located on a lush green campus along the Bangalore Trunk Road near Poonamallee, Chennai, the college is well-connected to Chennai, Kanchipuram, Thiruvallur, and the Chennai International Airport. **Since 2006, two-third of its eligible programs have been accredited by the National Board of Accreditation (NBA). The institution has consistently featured in the 201–300 band of the NIRF rankings since 2020** and was placed in the 51–100 band in the ARIIA 2023 Innovation Rankings.

The inception year 2000 marked the launch of departments in CSE, IT, and ECE, each with an intake of 60 students. The academic portfolio expanded in 2001–2002 to include undergraduate programs in EEE and MECH, along with postgraduate programs. Currently, the college offers 8 undergraduate programs and 3 postgraduate programs in Engineering and Management, with an annual intake of 3,210 and 276 students respectively.

Present Intake of PEC





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Panimalar Engineering College is powered by a dedicated faculty team of 572 members, of whom 214 hold doctoral degrees, including 32 Anna University-recognized Research Supervisors. Active collaboration with industry has yielded consultancy revenues of Rs. 39 lakhs, while research pursuits have resulted in 3950+ publications in Scopus/SCI journals with a Scopus h-index of 64. The college has also secured 289 patents (46 granted), and holds 51 copyrights.



To foster hands-on learning and innovation, the college houses 8 advanced laboratories and 9 Centres of Excellence established in partnership with industry. Over 75 MoUs with reputed national and international organizations support placements, research, and academic exchanges. Maintaining a consistent placement record of 80%+ over the past five years, the institution is favoured by top recruiters such as Cognizant, WIPRO, Tech Mahindra, ZOHO, Multiplier, Tejas Networks, ATTIVO Networks, Salesforce, FIS Global, KAAR Technologies, TCS, Accenture, HCL, Hyundai, Renault Nissan, Saint-Gobain, and more. Entrepreneurship is promoted from the first year, with over 11 start-ups active in 2023–24.

Students have secured admissions to premier institutions like IITs, Purdue, Carnegie Mellon, NUS, and others for higher studies. Participation in over 43 professional societies and student clubs enriches the learning ecosystem, with accolades in national contests like Smart India Hackathon organized by AICTE (10 Teams won), ISRO Hackathon and KAVACH 2023. A notable achievement includes winning the Microsoft Bounty Program (Rs. 18 Lakhs) IET India Scholarship Award 2022 (Rs. 3 lakhs).

Since 2016, PEC has been an active SWAYAM-NPTEL local chapter and serves as a Pearson Test Centre for global certifications. The college topped the Swachh Campus Rankings in 2018 & 2019 and earned a Clean and Smart Campus Award from AICTE in 2019.

With over 25 years of academic excellence, **Panimalar Engineering College** continues its steadfast commitment to transforming budding engineers into competent, disciplined, and morally responsible professionals. The institution consistently strives to impart quality



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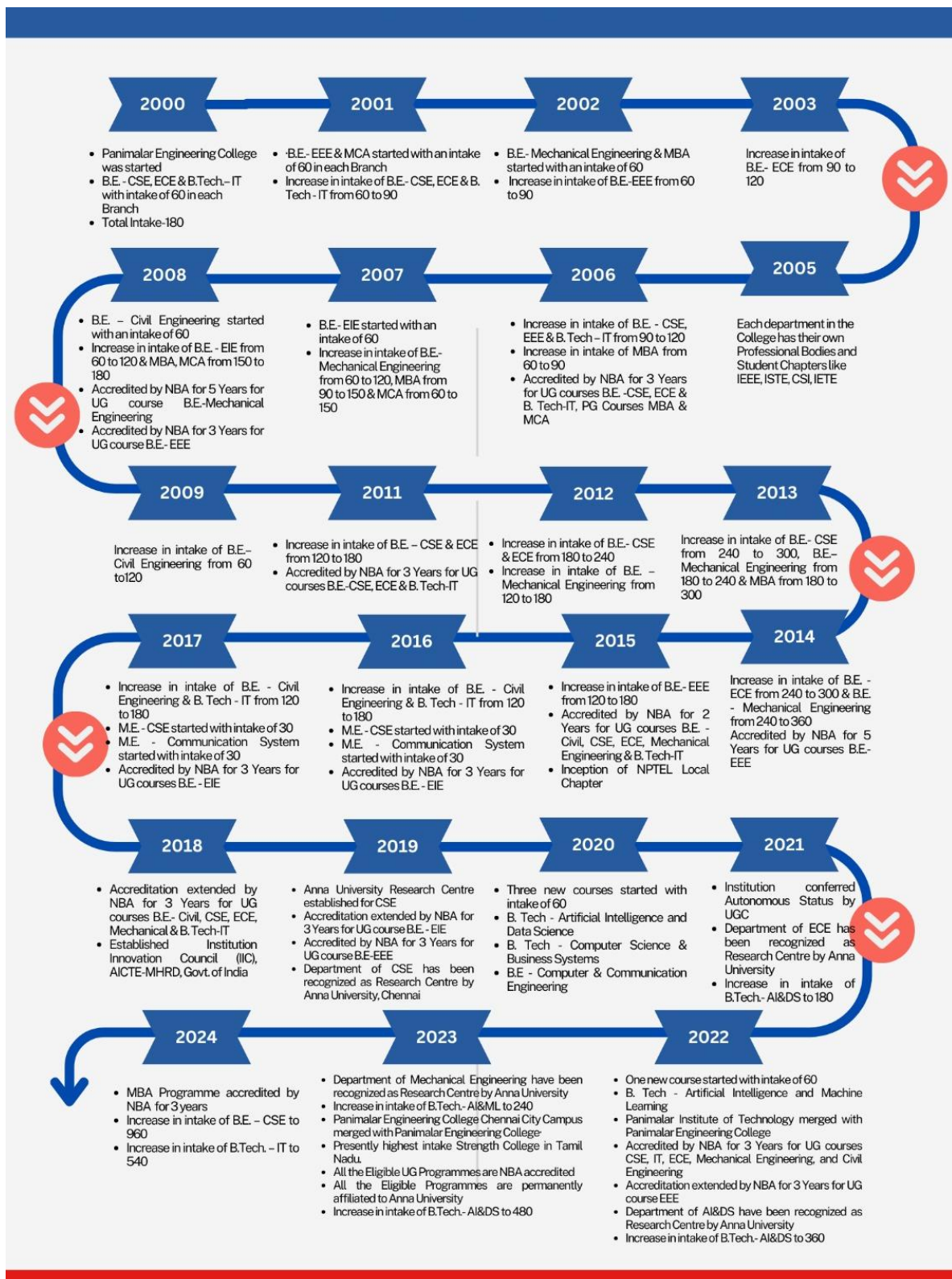
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education in engineering and technology through a holistic learning environment, strengthened by state-of-the-art infrastructure and a serene campus atmosphere.

Milestones





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2. Vision & Mission

Vision of the Institute

To transform the budding engineers into academically excellent, highly intellectual and self-disciplined engineering graduates to mould them as good citizens with the spirit of integrity and morality that would cater to the needs of our nation.

Mission of the Institute

- To impart quality education with high standards of excellence in engineering and technology.
- To provide an excellent infrastructure in a serene and conducive atmosphere that would motivate the students in their pursuit of knowledge in the field of engineering and technology.



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3. Strategic Objectives and Core Values

Strategic Objectives

- 1. Comprehensive Educational Excellence:**
Ensuring an education that is practical, innovative and research-intensive by adopting multidisciplinary approach.
- 2. Curricular Innovation & Responsiveness:**
Regularly update curricula to align with industry trends, societal shifts, and global advancements, preparing students for immediate impact and future challenges.
- 3. Growth & Community Contribution:**
Expand our presence with centres of excellence that contribute to the community and reflect our commitment to education and innovation.
- 4. Infrastructure for Future-Ready Learning:**
Develop world-class facilities that provide a robust foundation for advanced academic programs, ground-breaking research, and student development.
- 5. Sustainable Practices and Campus Culture:**
Embed sustainability into all aspects of institute life, from environmentally conscious campus operations to curriculum that educates on sustainable development.
- 6. Global Engagement & Connectivity:**
Strengthen international partnerships and programs to enhance the global competencies of our students and faculty, promoting cross-cultural exchange and international research collaborations.

Core Values

Panimalar adopts the following as its core values:

- **Excellence and Integrity**
- **Innovation and Resilience**
- **Interdisciplinary Learning**
- **Diversity and Global Insight**
- **Collaborative Leadership**
- **Social Responsibility and Lifelong Learning**

These strategic objectives fortify Panimalar mission to redefine educational standards and impact both locally and globally. The institute is dedicated to fostering a culture of innovation, inclusivity, and sustainability that will propel it to the forefront of global higher education.



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4. SWOC Analysis

<p>Strengths</p> <ul style="list-style-type: none"> ❖ Dynamic and Visionary Management Committee ❖ Accreditation and Approvals ❖ Industry Relevant and Student Centric Curriculum ❖ Incubating Research Culture ❖ Good Infrastructure Social Responsibility ❖ Women safety and empowerment ❖ High Quality student intake ❖ Financial sustainability ❖ Nationally and Internationally established Alumni 	<p>Weaknesses</p> <ul style="list-style-type: none"> ❖ Limited full time research scholars ❖ Consultancy and Research activities foundation level ❖ Start Ups by Graduates are Meagre
<p>Opportunities</p> <ul style="list-style-type: none"> ❖ Being in the middle of industry Cluster, demand in dynamic technological need ❖ Receiving Government promoting funds ❖ Encouraging start up culture ❖ Increasing engineering graduates with industrial collaborative global jobs ❖ Collaboration with National and International organizations 	<p>Challenges</p> <ul style="list-style-type: none"> ❖ Dynamic variation in Skill set of Engineering Graduates for Employment Opportunities ❖ Sustenance of Quality in new technical institutes Universities ❖ Virtual Universities and Online Courses

Strengths

1. Dynamic and Visionary Management Committee

Panimalar Engineering College benefits from a proactive and forward-thinking leadership team that drives innovation and academic excellence. The management committee ensures the institution stays aligned with industry trends, technological advancements, and global educational standards. Their strategic vision helps in continuous improvement and adaptation to changing educational landscapes.



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2. Accreditation and Approvals

The college holds prestigious accreditations from recognized bodies such as **National Board of Accreditation (NBA)** ensuring high academic standards. Affiliations with **Anna University** and approvals from regulatory authorities like **All India Council for Technical Education (AICTE)** enhance its credibility and attract quality students.

3. Industry-Relevant and Student-Centric Curriculum

The curriculum is designed to meet industry demands, incorporating emerging technologies like **AI, Machine Learning, IoT, and Data Science**. Regular updates ensure students gain relevant skills, making them job-ready. A student-centric approach with **interactive learning, project-based assessments, and industry internships** enhances practical knowledge.

4. Incubating Research Culture

The college promotes research through **funded projects, collaborations with industries, and participation in national/international conferences**. Faculty and students engage in research publications, patents, and innovations, fostering an environment of intellectual growth.

5. Good Infrastructure & Social Responsibility

- **Modern Labs & Smart Classrooms:** Equipped with advanced tools and software for hands-on learning.
- **Library & Digital Resources:** Access to e-journals, research papers, and technical databases.
- **Social Initiatives:** Community engagement programs, rural development projects, and awareness campaigns on sustainability.

6. Women Safety and Empowerment

The college ensures a safe and inclusive environment for female students through **24/7 security, anti-harassment committees, and empowerment programs**. Initiatives like **women-centric workshops, leadership training, and entrepreneurship support** encourage women empowerment in engineering.

7. High-Quality Student Intake

Admission is competitive, attracting **top-ranking students** from state and national entrance exams. Rigorous selection ensures a talented peer group, enhancing academic performance and campus recruitment opportunities.



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8. Financial Sustainability

The institution maintains a strong financial model through **tuition fees, government grants, industry collaborations, and alumni contributions**, ensuring long-term growth and development.

9. Nationally and Internationally Established Alumni

A strong alumni network provides mentorship, placement opportunities, and industry connections. Alumni working in **MNCs, research organizations, and startups** contribute to the college's reputation and student career growth.

Weaknesses

1. Limited Full-Time Research Scholars

Despite promoting research, the number of full-time Ph.D. scholars is relatively low. Increasing research fellowships and incentives could attract more candidates.

2. Consultancy and Research Activities at Foundation Level

Industry consultancy projects and funded research are still developing. Strengthening **industry-academia partnerships** and securing more R&D grants will enhance this aspect.

3. Start-ups by Graduates are meager

While the college encourages entrepreneurship, the number of successful startups by alumni is limited. Enhancing **incubation centers, funding access, and mentorship programs** can boost start-up culture.

Opportunities

1. Proximity to Industrial Cluster

Located near **IT parks and manufacturing hubs**, the college can leverage industry collaborations for **internships, live projects, and placements**.

2. Government Funding and Grants

Eligibility for **AICTE, UGC, and state government grants** can support infrastructure development, research, and innovation centers.

3. Encouraging Startup Culture

With government initiatives like **Startup India**, the college can establish a **Technology Business Incubator (TBI)** to nurture student startups.



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4. Global Job Opportunities for Graduates

Increasing demand for engineers in **multinational companies (MNCs)** and overseas markets presents placement and collaboration opportunities.

5. Collaboration with National and International Institutions

Partnerships with **foreign universities, student exchange programs, and joint research** can enhance global exposure.

Challenges

1. Dynamic Skill Requirements for Employment

Rapid technological changes demand constant curriculum updates to match industry needs. **Continuous skill development programs** are essential.

2. Sustaining Quality Amid Rising Competition

With new engineering colleges emerging, maintaining **high academic standards, faculty quality, and infrastructure** is crucial.

3. Competition from Virtual Universities and Online Courses

The rise of **MOOCs (Massive Open Online Courses) and virtual degrees** challenges traditional education. Blending **online and offline learning** can help stay competitive.

Panimalar Engineering College possesses robust academic foundations that position it well to implement the transformative reforms of NEP 2020. To maintain its competitive edge and emerge as a leader in technical education, the institution must strategically address current limitations while capitalizing on emerging opportunities.

By strengthening its research ecosystem through interdisciplinary projects and industry-linked innovation, expanding credit-based flexible learning systems via the Academic Bank of Credits, and fostering entrepreneurial mindsets through its incubation center, the college can effectively navigate implementation challenges.

These NEP-aligned initiatives - particularly the integration of skill-based electives, multiple entry-exit options, and technology-enhanced pedagogy - will enable Panimalar to develop future-ready engineers while achieving its goal of becoming a globally-recognized institution by 2030.



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5. Action Plan of NEP Implementation for the Next Five Years

The following are the outline of strategic approaches to implement the National Education Policy (NEP) 2020:

- **Curriculum Reform:** Develop a flexible, multidisciplinary curriculum with no hard separations between academic streams. Incorporate the Indian Knowledge System, environmental education, Tamil Heritage, EDC Courses and life skills.
- **Pedagogical Advancements:** Adopt learner-centric, tech-integrated pedagogy with a blend of traditional, flipped classrooms and digital methods.
- **Faculty Empowerment:** Establish Faculty Development Centres, fast-track promotions, and engage faculty from industry & international faculty.
- **Infrastructure Upgrades:** Expand digital infrastructure, libraries, and research labs. Increasing smart classrooms and e-content development.
- **Governance:** Transition to a transparent, tech-driven governance system. Form task forces for IDP implementation.
- **Assessment:** Continuous internal assessments, open-book formats, and module-based certification.

Given below is the **enhanced NEP 2020 Five-Year Implementation Action Plan (2025–26 to 2029-30)** in the table, now including the **Current Status (2024-25)** for each focus area:



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Focus Area	2024-25 Current Status	2025–26 Foundation	2026–27 Expansion	2027–28 Institutionalization	2028–29 Consolidation	2029–30 Global Expansion
Curriculum Reform	UG: 8 programs, PG: 3, Ph.D.: - 4 traditional structure	Launch multidisciplinary UG/PG/PhD programs with flexible exit, minor/honors options, working professionals programs	UG: 7 + minors, ABC implemented	Dual degrees & vocational expansion	Encourage interdisciplinary research	Continuous improvement
Curriculum Integration	R2023 in use, partial ethics/environment integration	Update to R2025; embed environmental/life skills, AI, IoT, Data Science	Curriculum updated to R2026	Biennial review	Continuous improvement	Continuous improvement
Pedagogical Advancements	50% ICT-enabled pedagogy	Shift to blended, learner-centric model using digital tools	60% ICT- enabled classrooms	80% ICT-enabled classrooms	100% ICT- enabled classrooms	100% ICT-enabled classrooms
Faculty Empowerment	1:18.5 ratio	Recruit & upskill faculty, improve ratios, international faculty exchange	1:18	1:17	1:16	1:15
Learning Resources	Study materials: 138,770; question bank available	Digitize and expand learning content	Content update; digital Q-banks	Continuous improvement	Continuous improvement	Continuous improvement
Assessment Reform	2 internal assessments/semester; internships optional	Continuous assessments,	Digital integration of assessments	Project work & research-oriented evaluations	Continuous improvement	Continuous improvement



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		open-book/module-based, credit-based internships				
Skill Development	Value-added courses (initial phase), limited MOOC use	Expand value-added/audit courses, introduce minors, PMKVY implementation.	Add value-added courses, minor course expansion	Expanded MOOCs	minors across departments	Continuous improvement
Flexibility & Credit Transfer	Initial stages of CBCS, no formal ABC or credit transfer	Implement CBCS & ABC, open electives, interdisciplinary research.	ABC/CBCS fully implemented	Credit transfer (online/ international)	Continual improvement of CBCS & ABC, open electives, interdisciplinary research.	Continual improvement of CBCS & ABC, open electives, interdisciplinary research.
Research & Innovation	Ph.D.: 4; UG research minimal; limited research infrastructure	Increase Ph.D. Enrollment, UG research, establish research park	Ph.D. intake increased to 6 Department	Ph.D. intake increased to 8 Department	Research Park setup	Focus on national/ international research output
Global Engagement	Initial stages	Atleast 2 MoUs with International Universities, host annual international conferences, invite 3-5 visiting faculty/ year	Expand international MoUs and admit international students	Promote overseas students and faculty exchange, Promote overseas internships & scholarships	Continuous improvement	Continuous improvement



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Category	Near Term / Planned / Upcoming	Future / Progressive / Ultimate Goals
Curriculum Reform	Introduce interdisciplinary UG/PG/Ph.D. programs, implement ABC (Academic Bank of Credits) system.	Expand liberal arts course options, dual degrees, and encourage research integration.
Pedagogical Advancements	Shift to blended models.	60%-80% ICT-enabled classrooms.
Faculty Improvement	Improve ratio incrementally to 1:18 through faculty recruitment and development.	Improve ratio incrementally to 1:15 through faculty recruitment and development.
Learning Resources	Digitization, content quality enhancement	Integration of advanced learning platforms.
Assessment Reforms	Digital and continuous assessment methods.	Introduction of project-based and experiential evaluations.
Skill Development	Expanded use of MOOCs. Integration of industry-relevant, hands-on skill training.	Course expansion and placement support.

Timeline highlights of proposed NEP 2020 Five-Year Implementation Action Plan

The above table outlines the institution's strategic roadmap across core academic and administrative areas, showcasing progressive milestones from current practices to future goals. It reflects a commitment to continuous improvement and alignment with national educational policies.



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6. Adoption of Academic Bank of Credits (ABC)

The **Academic Bank of Credits (ABC)**, introduced by the **University Grants Commission (UGC)** under the **National Education Policy (NEP) 2020**, allows students to store, transfer, and redeem academic credits across institutions. Panimalar Engineering College aims to integrate ABC effectively to enhance **flexibility, interdisciplinary learning, and student mobility** over the next five years.

Key Objectives (2024-2029)

- ❖ **Seamless Credit Transfer:** Enable students to earn credits from **MOOCs (SWAYAM, Coursera, edX), partner universities, and industry certifications.**
- ❖ **Multi-Disciplinary Learning:** Promote **cross-departmental course enrolment** (e.g., AI for Mechanical students).
- ❖ **Industry & Global Collaborations:** Partner with **foreign universities, industries, and research bodies** for credit recognition.
- ❖ **Digital Integration:** Implement a **blockchain-based ABC dashboard** for secure credit tracking.

Five-Year Implementation Roadmap

Phase 1: Infrastructure & Awareness (2024-2025)

- ❖ **ABC Portal Setup:** Register Panimalar Engineering College with the **national ABC portal.**
- ❖ **Faculty Training:** Conduct workshops on **credit mapping, MOOC integration, and ABC guidelines.**
- ❖ **Student Orientation:** Educate students on **credit accumulation, transfer policies, and benefits.**

Phase 2: Credit Flexibility & Partnerships (2025-2026)

- ❖ **MOOC Integration:** Approve **20+ SWAYAM/NPTEL courses** for credit transfer.
- ❖ **Inter-University Agreements:** Sign MoUs with **Anna University, IITs, and foreign institutions** for credit mobility.
- ❖ **Industry Credits:** Recognize **internships, hackathons, and certifications** (e.g., AWS, CISCO) for academic credits.

Phase 3: Expansion & Digital Tracking (2027-2028)

- ❖ **Blockchain-Based Ledger:** Implement a **secure digital system** for credit storage & validation.
- ❖ **Interdisciplinary Electives:** Introduce **5+ new interdisciplinary courses** (e.g., Robotics + CS, IoT + ECE).
- ❖ **Research Credits:** Allow **research projects & publications** to count toward degree requirements.



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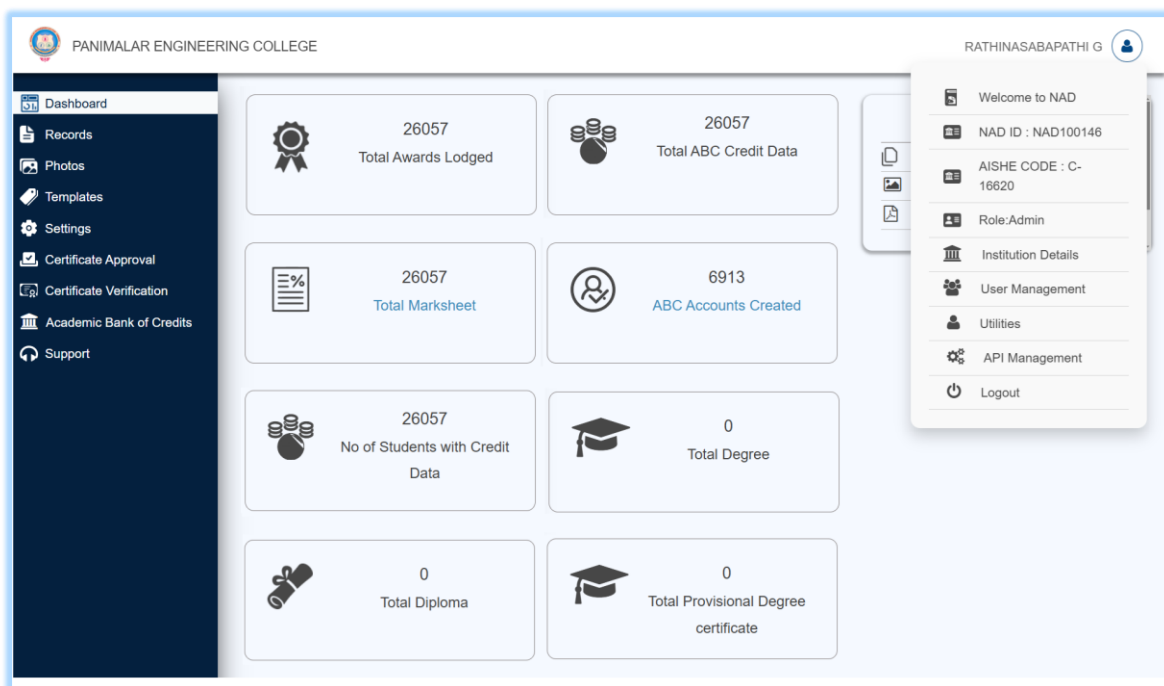
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Phase 4: Full-Scale Adoption (2028-2029)

- ❖ **100% ABC Compliance:** Ensure all courses are **ABC-recognized**.
- ❖ **Global Mobility:** Facilitate **semester abroad programs** with credit transfer.
- ❖ **Alumni Credit Redemption:** Allow alumni to **upgrade degrees** using stored credits.

Expected Outcomes by 2030

- ❖ **30% increase** in student enrollment due to flexible learning options.
- ❖ **50+ industry-recognized courses** integrated into the curriculum.
- ❖ **10+ international university tie-ups** for student exchange.
- ❖ **Reduced dropout rates** via multiple entry-exit options.



Dashboard - Academic Bank of Credits (Current Status)

URL: <https://coe.panimalar.ac.in/ABC.php>

NAD ID : NAD100146				
Total Awards Lodged	Total ABC Credit Data	Total Mark Sheet	ABC Account Created	No.of Students with Credit Data
26057	26057	26057	6913	26057

Panimalar Engineering College will leverage ABC to **transform engineering education** by 2029, ensuring **flexibility, employability, and global competitiveness**. By adopting **digital credit tracking, industry collaborations, and interdisciplinary learning**, the institution will emerge as an **NEP 2020 pioneer**.



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7. Curriculum Framework (OBE Practice)

Panimalar Engineering College, an autonomous institution under Anna University, Chennai, envisions evolving into a *centre of excellence in engineering education* with a strong focus on outcome-based education (OBE), industry alignment, and holistic student development. Our curriculum development strategy is rooted in flexibility, interdisciplinarity, and innovation, drawing inspiration from national benchmarks and globally recognized best practices in higher education.

1. Vision for Curriculum Development

The core objectives of our curriculum strategy are to:

- Align with National Education Policy (NEP) 2020.
- Foster academic autonomy and experiential learning.
- Bridge the gap between academia and industry.
- Prepare future-ready professionals, researchers, and entrepreneurs.

2. Curriculum Architecture and Credit System

Panimalar proposes a Choice-Based Credit System (CBCS) as per UGC/AICTE norms, designed to allow mobility and flexibility. Key features include:

- Semester-based credit allocation: core, discipline electives, open electives, value-added and project components.
- Multiple entry and exit options with credit transfers.
- Integration of NPTEL, SWAYAM, and MOOCs as elective components.
- Project-Based Learning (PBL), internships, and industry-based capstone projects.
- Value-based courses on ethics, sustainability, innovation, and entrepreneurship.

3. Outcome-Based Education (OBE) Implementation

All programs will adopt the NBA-model of OBE:

- Clearly defined Program Learning Outcomes (PLOs), Program Specific Outcomes (PSOs), and Course Learning Outcomes (CLOs).
- Bloom's Taxonomy applied in course objectives and assessments.
- Rubric-based evaluations to measure learning outcomes.



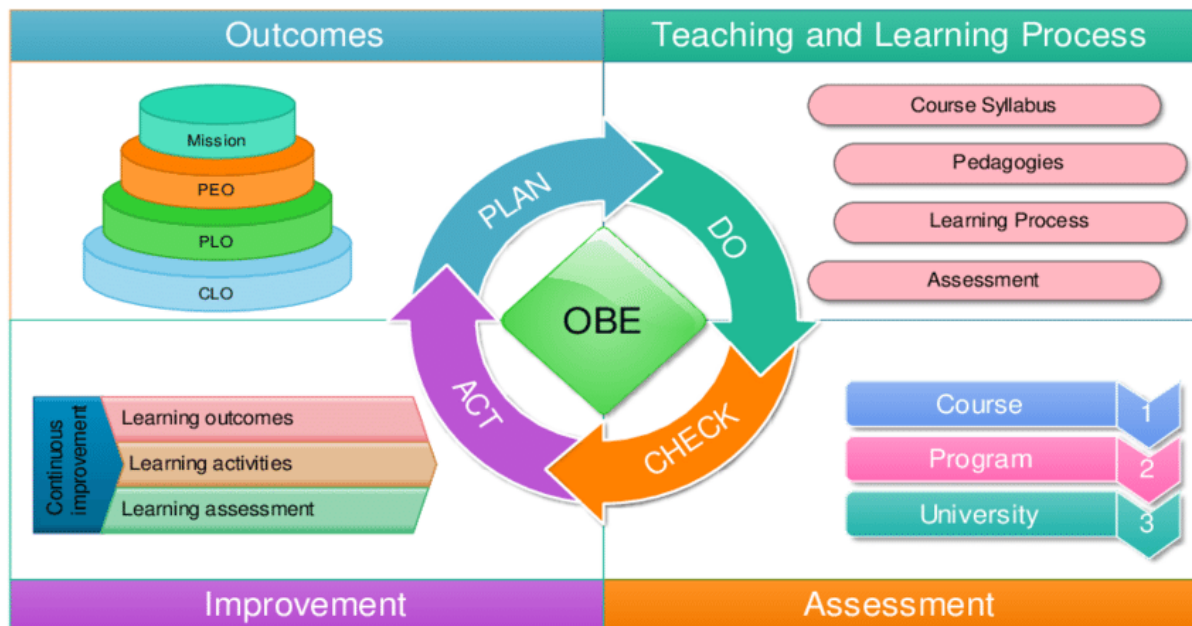
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A 3-year curriculum revision cycle, incorporating inputs from:

- Industry advisory boards
- Alumni and academic experts
 - Statutory/regulatory bodies (AICTE, NAAC)



4. Interdisciplinary and Research-Oriented Curriculum

Inspired by IGNOU's flexibility and IIT Madras' research culture, we propose:

- Minor/Honours degree options (e.g., AI in ECE, FinTech in Management).
- Undergraduate Research Opportunities (UROP).
- Capstone projects co-guided by industry mentors.
- UG/PG curriculum aligned to Sustainable Development Goals (SDGs) and national priorities.

5. Technology Integration and Digital Learning

Inspired by IGNOU's model and Delhi University's blended formats:

- Use of LMS platforms (Moodle, Google Classroom).
- Deployment of AI-based assessments, virtual labs, remote proctoring.
- Recognition of Prior Learning (RPL) and Open Credit Learning.
- Hybrid models of course delivery (online/offline/blended).

6. Local and Global Relevance

To address regional and global needs:

- Courses aligned with Tamil Nadu State Skill Development Mission.



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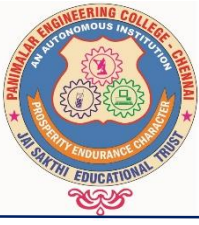
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- Language electives (Tamil, Hindi, German, French, etc.).
- Internships, rural immersion, social innovation, and industry-linked programs.
- Plans for international collaborations, dual degrees, and credit exchange programs.

Curriculum Quantification Plan (Across Programs)

Component	Target by 2026
Total Credits – UG (4-year)	160–165 credits
Total Credits – PG (2-year)	75–80 credits
Core + Major Courses	60–70% of total credits
Electives (discipline-specific + open)	20–30%
Interdisciplinary Electives Offered	10+ per semester
MOOCs/NPTEL/Global Certifications	Allowed up to 20% of total program
Industry Internships	Minimum 4–6 weeks UG & PG
Capstone Projects	100% UG & PG students
Research/Innovation Projects (UG/PG)	50% of UG & 75% PG by 2026
Curriculum Review Cycle	Once in 3 years (with 25–30% syllabus revision)
Course Outcome–Program Outcome (CO–PO) Mapping	100% of courses
Faculty Trained in OBE, Curriculum Design,	100% by 2026
LMS/Digital Integration in Courses	100% of theory courses with LMS
Courses Delivered in Hybrid/Blended Mode	60–75%
Foreign Language Offerings	Tamil + 3 foreign languages
Industry Experts in Boards of Studies	Minimum 30% representation
Open Learning & Prior Learning Recognition (RPL)	Implemented for diploma-to-degree pathways
Honors/Minors Enrollment	Offered in all branches



8. Alumni Connect

In alignment with its commitment to academic excellence and transformative education, **Panimalar Engineering College** seeks to cultivate a vibrant and mission-driven alumni ecosystem. This dynamic network will serve as a cornerstone of institutional growth, fostering a culture of **knowledge exchange, mentorship, and resource mobilization**.

Through strategic engagement with its alumni community, PEC aspires to create enduring partnerships that inspire academic innovation, empower student success, and reinforce the institution's global standing. The alumni, as lifelong ambassadors and collaborators, will play a pivotal role in shaping the future of Panimalar, ensuring that its legacy continues to thrive across generations.

Panimalar Alumni Knowledge & Innovation Network (PAKIN)

Strengthen an alumni-driven ecosystem for structured **knowledge transfer, mentorship, and innovation acceleration**.

Goals:

- Create domain-specific **Knowledge Cells** led by alumni in fields like Industry 5.0, AI/ML, Sustainable Tech, Entrepreneurship, FinTech, and Core Engineering.
- Organize **monthly expert sessions**, tech talks, and panel discussions by alumni to expose students to real-world problem-solving.
- Collaborate with alumni for **curriculum co-creation**, ensuring alignment with industry advancements.

Mentorship through Alumni Nexus (MANEX)

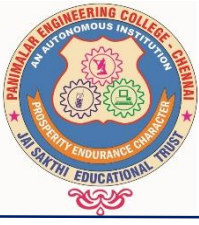
Facilitate a formal, long-term alumni-student mentorship program for career and personal development.

Goals:

- Pair **final-year and pre-final-year students with industry-experienced alumni** for semester-long mentoring on career paths, higher education, and soft skills.
- Launch a **digital mentoring platform** integrated with PEC's student portal for real-time guidance, portfolio building, and feedback tracking.
- Organize **Mentor Masterclasses** every semester, with alumni mentors addressing discipline-specific and interdisciplinary growth topics.

Alumni for Infrastructure and Innovation Fund (AIIF)

Mobilize alumni contributions towards research, infrastructure, and innovation centers.



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Goals:

- Establish **Alumni Endowment Fund** with transparent reporting and tiered recognition programs (bronze, silver, gold contributors).
- Initiate 2-3 **alumni-sponsored R&D labs or innovation clusters** by 2027 in emerging domains such as IoT, EV, and MedTech.
- Launch a “**100 Projects, 100 Alumni**” campaign encouraging alumni to co-fund academic projects/startups with faculty-student teams.

Institutional Development Advisory Council (IDAC)

Integrate alumni into institutional planning, governance, and strategic direction.

Goals:

- Form a **Panimalar Alumni Advisory Board** with quarterly meetings contributing insights on international collaborations, academic reforms, and global rankings.
- Nominate alumni to **Board of Studies and curriculum committees** to incorporate future workforce trends.
- Conduct annual **Alumni Think Tank Summit** for aligning PEC’s roadmap with national and global education benchmarks.

Panimalar E-Placement & Career Exchange (PEPCE)

Harness alumni network for career enablement, internships, and job creation.

Goals:

- Launch an **e-placement platform** exclusively for PEC alumni to post internship/job openings, mentoring opportunities, and entrepreneurial ventures.
- Host **Virtual Career Fairs** twice a year featuring alumni recruiters and HR professionals across industries.
- Publish a **PEC Alumni Talent Report** mapping alumni success stories, sector representation, and global footprints—helping with branding and student inspiration.

Campus Engagement & Institutional Branding

Transform alumni presence into tangible, visible impact across PEC’s landscape.

Goals:

- Initiate **Alumni-Driven Campus Beautification Projects**, including gardens, lounges, and collaborative learning spaces.
- Develop **PEC Alumni Plaza** showcasing notable alumni, alumni-led innovations, and interactive stories.



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- Involve alumni in **branding PEC globally** by representing the institution in industry forums, international events, and publications.

Operational Targets & Timeline

Initiative	Target Timeline
Launch of PAKIN and MANEX	Within 6 months
Digital Alumni Mentorship Platform	12 months
First Alumni-Funded Lab	18 months
Endowment Fund Goal (₹1 Cr)	By 2027
Panimalar Alumni Plaza and Knowledge Wall	24 months
Annual Alumni Think Tank Summit	From Dec 2025 onwards

Impact Outcomes

- **Enhanced student employability** through alumni mentoring and internships.
- **Global visibility** for Panimalar via alumni-driven branding and conferences.
- **Accelerated research output** and innovation infrastructure via targeted alumni funding.
- **Integrated institutional development**, aligning alumni with long-term strategic planning.



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9. Industry-Institute Interaction

In the rapidly evolving technological landscape, bridging the gap between academic learning and industry requirements is essential. A strategic Industry-Institute Interaction plan empowers educational institutions to stay relevant, promote innovation, and prepare industry-ready graduates. This document outlines a comprehensive five-year roadmap for strengthening collaborations with industry to enhance academic, research, and societal outcomes.

Objectives

- Fostering sustained partnerships with industry for mutual growth.
- Student employability enhancement through practical exposure and skill development.
- Encouraging innovation and joint research addressing real-world challenges.
- Faculty competency improvement through industry immersion and collaborative training.
- Strengthening entrepreneurship, start-up incubation and intellectual property generation.

Key Strategic initiatives and Development Plan

Curriculum Development and Upgradation

To ensure that academic programs remain relevant and responsive to the dynamic needs of the industry, the institution will undertake a comprehensive curriculum alignment in regard to job readiness. This will involve the systematic integration of feedback and recommendations from industry experts into the curriculum design and review process. Furthermore, each academic department will establish and actively engage with an Industry Advisory Board, composed of professionals from diverse sectors, to provide on-going guidance, validate course content, and support the continuous improvement of academic offerings.

Research and Development Collaboration

To foster a culture of innovation and applied research, the institution will actively promote joint research initiatives with industry partners, particularly in the fields of emerging technologies. Collaborative efforts will be directed towards solving real-world challenges while enhancing the research capabilities of both students and faculty. As a part of this initiative, Centres of Excellence (CoEs) can be extended in cutting-edge domains such as Artificial Intelligence, AR/VR, Green Energy, and Smart Infrastructure. These centres will serve as hubs for interdisciplinary research, skill development, and technology incubation. Initiatives to strengthen the faculty experts with respect to domain for funded research projects

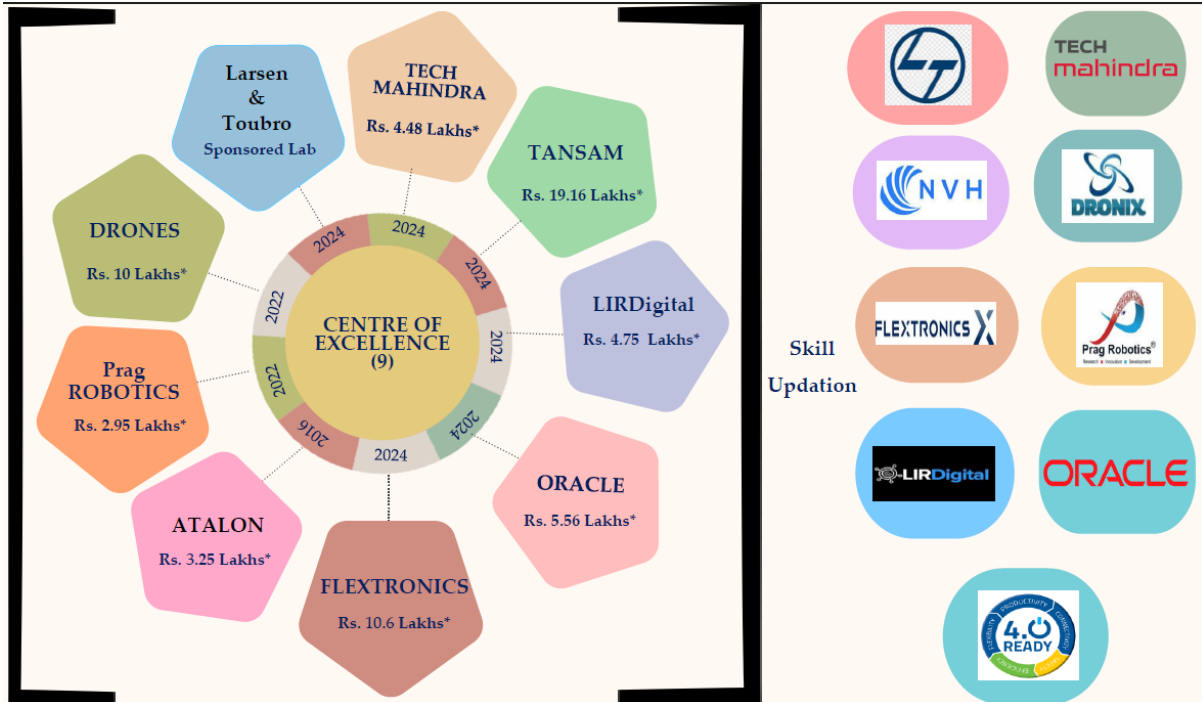


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in partnership with companies. To support innovation outcomes, an Intellectual Property (IP) facilitation centre will also be set up to guide patent filing, protection, and commercialization efforts in collaboration with industry experts.



Internship and Training Opportunities

The institution aims to ensure 100% internship placement for all pre-final year students to enhance their practical exposure and employability. Additionally, to strengthen the ecosystem an "Industry Immersion Program" will be launched to provide faculty members with real-time industry experience and insights in experiencing new upcoming technologies.

Entrepreneurship and Innovation Support

The institution will strengthen its Institute Innovation Council (IIC) and establish a robust Entrepreneurship Development Cell to foster a vibrant startup ecosystem. Strategic collaborations with industries will provide mentoring, seed funding, and co-incubation support to budding entrepreneurs. Additionally, annual innovation contests, startup expos, and pitch fests will be organized with active industry participation to nurture and showcase entrepreneurial talent.

Infrastructure Development and CSR Involvement

The institution is committed to developing state-of-the-art laboratories and maker spaces by collaborating with industry leaders and leveraging corporate social responsibility (CSR) initiatives. These advanced facilities will serve as a hub for cutting-edge research,



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enabling students to gain practical, hands-on experience in various fields. Through these spaces, students will have the opportunity to work on real-world projects, solve complex problems, and engage in innovative design processes. This initiative aims to bridge the gap between academic knowledge and industry practices, equipping students with the skills and experience needed to excel in their careers.

Global Linkages

The institution will partner with global institutions and industries to foster joint projects and student exchange programs by integrating these initiatives into institutional policies. Furthermore, an International Industry-Academia Innovation Conclave will be organized, along with the launch of a digital platform to efficiently track and manage all industry-institute interaction activities via a centralized dashboard.

This Industry-Institute Interaction Plan is a commitment to transforming the educational landscape by integrating practical relevance, innovation, and global competitiveness into engineering education. Through sustained collaboration, the institute aims to evolve into a hub of industry-aligned learning, cutting-edge research, and impactful societal contributions.



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10. Research and Development

Panimalar Engineering College, with its four research centres recognized by Anna University, has made a meaningful impact by addressing challenges faced by the community. Through these research centres, the college encourages young faculty to engage in research, fostering collaboration across various fields. The centres focus on a multidisciplinary approach, offering a platform for ground breaking research that results in valuable intellectual property rights

Quality Research Curriculum Implementation

Our college is committed to advancing a wide range of innovative, high-caliber research initiatives across all programs, inspired by global trends, societal demands, and technological progress. A research-driven curriculum will be introduced, and student intake expanded to align with the objectives of NEP 2020. To further enrich the academic and research experience, the project work essential to both undergraduate and postgraduate programs will be optimized through a more streamlined and efficient process.

Goals

- **Strengthen and expand the research infrastructure** at the undergraduate level by providing access to essential research tools, labs, and facilities, encouraging early involvement in research activities.
- **Focus research efforts on energy-efficient technologies**, offering a challenging area for postgraduate students and research scholars to explore.
- **Foster interdisciplinary collaborations** between departments to promote multi-disciplinary research.
- **Encourage interdisciplinary projects** for undergraduate students, directing their innovative work towards addressing societal needs.
- **Strengthen collaborations between departments** and external institutions to promote interdisciplinary research, while continuously upgrading resources to support innovation in areas that tackle national and societal challenges.
- **Prioritize research** in solar, wind, and alternative energy sources, with an emphasis on energy-efficient technologies, as a key focus for postgraduate and Ph.D. research.



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- **Incorporating live projects and case studies into curricula** will provide hands-on experience in research methodologies and foster a research-oriented mindset.
- **Establish the college as a leading hub** for cutting-edge research and innovation, with national and international recognition.
- **Promote research on GEN-AI, Robotics, AR/VR, and Smart City Management** to address societal challenges.
- **Ensure that research efforts are strategically structured** and aligned with the college's existing assets and long-term goals to achieve research excellence.
- **Develop departments into premier research** and innovation centres, producing impactful, cutting-edge publications and IPRs.
- **Provide effective mentoring across departments** to sustain a culture of research excellence, ensuring consistent success in obtaining grants at both national and global levels.

Overseeing Quality-Driven Research Projects

The major research themes identified by the college aligned with the objective of NEP 2020 are:

- Artificial Intelligence & Machine Learning
- Sustainable Practices and development
- Technology concepts of AR/VR, Block chain and security practices
- Language, Translation and Literary Studies
- Heritage, Culture and Arts
- Image and Signal Facing 5G Technologies
- Entrepreneurship and Technology Incubators
- Geopolitical and Transnational Studies
- Social Justice and Community Engagement
- Global Trade and Supply Chain Management
- Informatics, Communications and Media
- Integration of Renewable Energy
- Sustainable Materials for Future Technology
- Corporate Governance and Finance
- Research on Agricultural Sciences with AI



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- Healthcare and Medical Sciences
- Technological interfaces with Sciences and Humanities

Goals

- **Foster cutting-edge research in emerging areas** such as AI, Data Science, and their applications in modern agriculture, healthcare, and medical sciences.
- **Strengthen research support by introducing updated protocols**, conducting workshops on proposal development and ethical practices, and providing better access to scientific instruments with hands-on training.
- **Create and strengthen Centres of Excellence** in fields like Quantum Computing, AI in Healthcare, and Cultural Heritage to drive interdisciplinary research and attract external funding.
- **Enhance research infrastructure** through a comprehensive facility audit, and launch regional, community-driven initiatives to tackle pressing societal issues.
- **Introduce a ground breaking Longevity Research Program** to advance studies in health and lifespan, positioning the college at the forefront of this emerging field.
- **Ensure the sustainable growth of research by securing both National and International funding**, seed grant improving intellectual property protection, and maintaining cutting-edge research infrastructure aligned with future technological trends.

Research Oriented experienced faculty members

Research-oriented faculty form the cornerstone of college mission to generate new knowledge, drive innovation, and address complex societal challenges. The college academic excellence lies a distinguished and dynamic faculty recognized for their contributions. In recent years, the college has implemented a series of extensive research initiatives for faculty members, leading to the attainment of 229 Ph.Ds. This has significantly enriched its intellectual capital and reinforced the teaching and research environment across departments and affiliated units. As a result, the Scopus h-index has risen to 64, accompanied by 108 IPRs. This influx of new talent has fostered a vibrant academic culture that encourages interdisciplinary collaboration, cutting-edge research, and high-quality education. Recognizing that impactful research requires continuous support, the college is committed to identifying faculty with strong research potential and providing them with the necessary resources and appreciations.



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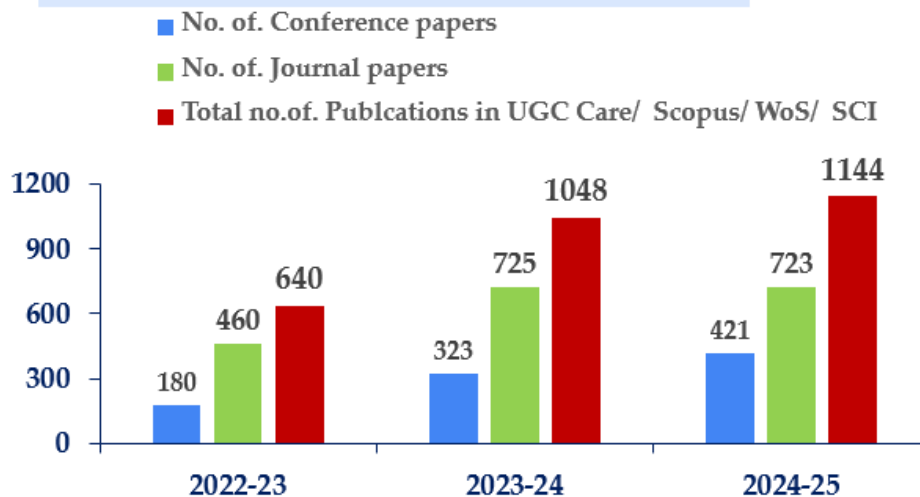
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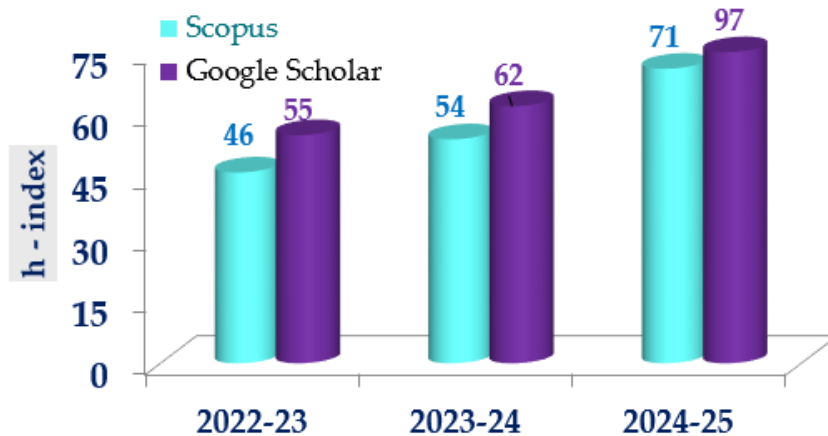
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Through targeted initiatives such as research grants, collaborative networks, sabbatical opportunities, and exposure to international research platforms, faculty members can be empowered to become thought leaders and pioneers in their domains. This strategic focus on nurturing research talent is essential not only for individual academic growth but also for the long-term advancement of the institution and its role in contributing to national and global knowledge ecosystems.

Research Publications



Quality of Publications





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Goals

- **Develop a structured framework to identify research-inclined faculty** by analysing metrics such as publication records, success in grant applications, and participation in funded research projects.
- **Introduce research incentive schemes** that include internal funding support, sabbatical leave, and opportunities for national/international conference participation to recognize and reward active researchers.
- **Establish a centralized research facilitation cell** to provide administrative and logistical support, such as proposal writing assistance and coordination with funding agencies.
- **Facilitate interdisciplinary research collaborations** by creating platforms that connect faculty across departments, fostering joint research proposals and knowledge sharing.
- **Create faculty research clusters or thematic groups** focused on high-impact research areas, encouraging synergy and collective output.
- **Establish faculty-led research councils or committees** to involve them in institutional research policy-making, review processes, and strategic direction setting.
- **Align faculty research with the college strategic roadmap** by mapping individual research contributions to institutional goals in science, technology, social innovation, and cultural preservation.
- **Develop globally competitive research hubs** within the college, led by distinguished faculty, to position the institution as a leader in key academic disciplines.
- **Implement long-term faculty development plans**, including structured sabbaticals, visiting researcher programs, and exposure to international best practices.

Student Involvement in Research

Active student participation in research is a cornerstone of academic excellence in engineering education. College increasingly promote a research-oriented culture by integrating students into faculty-led projects, innovation labs, and industry collaborations. Through undergraduate and postgraduate research initiatives, students gain hands-on experience in problem-solving, design thinking, and advanced technologies. Opportunities such as final-year projects, internships, hackathons, research assistantships, and participation in national and



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international competitions empower students to contribute to cutting-edge discoveries. This early exposure not only enhances technical competence and critical thinking but also prepares students for higher studies, entrepreneurial ventures, and research careers in academia and industry. Aligning research priorities with Sustainable Development Goals and national missions such as Digital India and Make in India ensures research outcomes contribute directly to societal and economic needs.

Goals

- **Design and implement undergraduate and postgraduate programs that emphasize research-based learning**, enabling students to actively engage in small-scale research projects under the guidance of experienced faculty. These projects will not only cultivate critical thinking but also lay the foundation for future academic inquiry.
- **Interactive workshops focused on innovation, patenting, and IPR** will be conducted regularly. These workshops will empower students with the knowledge and tools required to protect their creative ideas and understand the value of intellectual contributions in the academic and commercial domains.
- **Embed mandatory research components** in final-year curricula to ensure students engage in original research work with potential for publication or patenting.
- **Forge research collaborations with industry partners**, allowing students to work on real-world challenges under professional mentorship, fostering innovation with commercialization potential.
- **Facilitate international research exchanges and participation in global conferences** to broaden students' perspectives and deepen the impact of their innovations.
- **Introduce a credit-based recognition system** where students earn academic credits for presenting research or attending conferences, with clearly defined criteria for evaluation.

Ph.D. Scholars

Increasing the number of Ph.D. research scholars is critical to strengthening the college research ecosystem. These scholars form the backbone of high-quality academic research, contributing significantly to the generation of new knowledge, innovation, and scholarly output. By expanding this cohort, the college not only boosts its research productivity and



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global academic standing but also nurtures a vibrant intellectual environment that fosters interdisciplinary collaboration and innovation.

Moreover, a robust population of doctoral researchers enables the college to take on more ambitious, long-term research projects and enhances its ability to attract competitive funding from national and international agencies. These scholars also serve as mentors and role models for undergraduate and postgraduate students, enriching the overall academic culture and supporting the development of the next generation of researchers. Therefore, strategic efforts to increase and support this group are vital for sustaining the college growth as a leading research institution.

S. No.	DepartmentName	No. of. Scholars Pursuing
1	Computer Science and Engineering	25
2	Electronics and Communication Engineering	43
3	Artificial Intelligence and Data Science	19
4	Mechanical Engineering	3

Goals

- **Offer competitive scholarships for Ph.D. scholars** to strengthen the college research foundation and retain promising talent.
- **Promote government-funded scholarships for doctoral research** by actively assisting scholars in applying for fellowships.
- **Expand research infrastructure** including laboratory facilities, digital and physical library resources, and common research spaces to accommodate the increasing number of scholars and support diverse research needs.
- **Recruit additional faculty members with a strong research focus** to provide high-quality mentorship and supervision, ensuring that each scholar receives adequate guidance for their academic and professional growth.

Faculty Encouragement for Book Publications, Research Publications and Patents

The goal is to establish a strong IPR infrastructure that fosters innovation and academic development at all levels - among students, researchers, and faculty members. The college will implement a comprehensive policy to encourage and support contributions to IPR from



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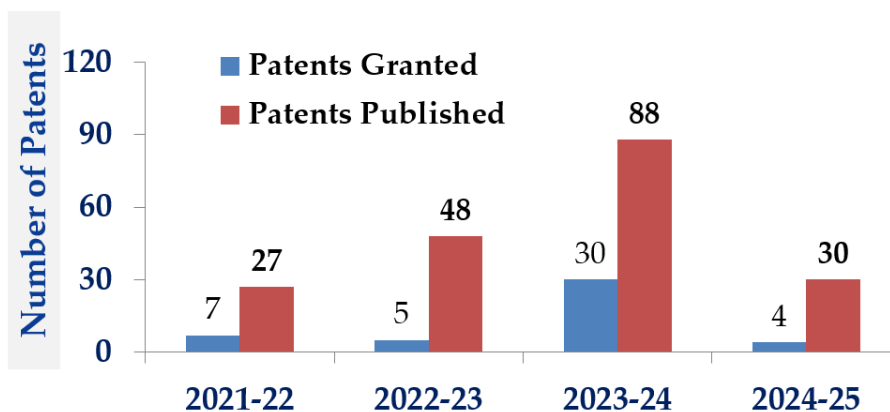
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undergraduate and postgraduate students, research scholars, and faculty, thereby strengthening the college IPR portfolio and promoting a culture of intellectual innovation.



Goals

- **Enhance Institutional publication fund and create small funding pools** to support research initiatives, enabling all researchers to access resources for publication. These funds will prioritize high-impact research with potential for patents or publications.
- **Organize awareness programs and provide targeted training** on IPR, publishing ethics, and patenting processes for students, research scholars, and faculty. Additionally, IPR professionals will be invited to offer practical insights on securing intellectual property.
- **Form interdisciplinary research centres and establish an institutional repository** to promote collaboration across departments, facilitating research that leads to patents or publications. The repository will provide a central platform for storing and accessing the college research output, including theses, publications, and patents.
- **Provide monetary incentives for publications and patents** while strengthening the IPR Cell to assist with patent filing, copyright issues, and research publication needs. The IPR Cell will be equipped to guide and support the college community in securing IPR.
- **Establish Centres of Excellence and pursue national/international collaborations** in key research areas, driving long-term innovation and producing high-quality publications, patents, and books. These collaborations will enhance the college global standing.



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- **Create an IPR endowment fund and implement a patent commercialization policy** to support research, publication costs, and patenting efforts, ensuring long-term financial sustainability and enabling faculty and students to benefit from patent licensing or product development. Additionally, sabbaticals for faculty will be institutionalized to encourage book writing and research projects that contribute to the college academic and IPR output.

International Conferences/Seminars

Conferences play a pivotal role in cultivating a dynamic research and academic culture within the college. They serve as platforms for showcasing innovative research, promoting intellectual exchange, and fostering collaboration across disciplines. The college can significantly enhance its research visibility and impact by hosting and participating in national and international conferences. Conferences provide essential opportunities for research scientists, faculty members, and students to stay actively involved in the latest developments in their respective fields. Regular conferences allow researchers to present their findings, receive critical feedback, and engage with peers, further stimulating the progression of academic knowledge. In addition to hosting its own conferences, the college encourages students to actively participate in external conferences and workshops, helping them to gain exposure to a broader academic community.

To support these endeavours, the college offers travel grants and other forms of assistance to students and faculty members, enabling them to attend and present at these conferences. This support not only encourages participation but also enhances the professional development of students, faculty, and researchers by expanding their networks and exposing them to global research trends. Through these efforts, the college can solidify its reputation as a hub for innovation, while providing valuable opportunities for growth and collaboration within the academic community.

Goals

- **Organize regular conferences focusing on emerging research areas** such as AR-VR technologies, Sustainability practices with thematic workshops that allow in-depth exploration of specific research aspects.
- **Create opportunities for student-led conferences**, where undergraduate and postgraduate students, as well as research scholars, can present their research and



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compete for awards. This will increase student engagement and provide recognition for outstanding contributions in innovative research communication.

- Expand the **scope of conferences to include interdisciplinary research**, fostering collaboration across diverse fields such as computer science, psychology, and education, particularly focusing on the integration of integrated technologies.
- **Seek government and private-sector grants** to fund conferences, particularly those centered on advanced research and innovation. This will alleviate financial pressure on the college while ensuring the organization of high-quality, impactful events.
- **Launch an annual international conference series in strategic research domains** to position the college as a prominent centre for academic exchange. These events will draw global scholars, elevate the college academic profile, and foster opportunities for international research collaboration.



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11. Academic and Research Collaboration with Indian and International HEIs

Academic and research collaborations will offer a comprehensive, high-quality education through innovative courses and globally pertinent curricula, attracting a diverse student body from across the world. By integrating cutting-edge research and advanced coursework, these collaborations will deliver an education that resonates internationally, drawing students from various countries seeking world-class learning opportunities. Through strategic academic and research partnerships, the institution will provide a well-rounded, top-tier education with globally relevant programs, making it an attractive destination for international students.

By partnering with other academic institutions, research organizations, and industry leaders, HEIs foster an environment where knowledge and expertise are shared across disciplines. Such partnerships strengthen the research ecosystem bringing holistic development for faculty and students and enhance its contribution to national and global technological development. Academic and research collaboration, as well as the mobility of students and faculty through joint degree and dual degree programmes, is expected to help Indian HEIs achieve higher global rankings.

Over the past five years, the college has established numerous research-focused collaborations, laying a strong foundation for future expansion with various International Universities. These partnerships hold significant potential for growth, aligned with emerging academic and research priorities.

Goals

- **Organize joint workshops, seminars, and webinars** on emerging topics in collaboration with partner institutions to build academic relationships and exchange expertise.
- **Initiate collaborative research projects in high-impact areas** such as AI, climate change, biotechnology and public policy supported by joint funding proposals.
- **Sign MoUs with National and International HEIs** to facilitate joint research projects and collaborative teaching initiatives, promoting Twinning Programme, Joint Degree and Dual Degree



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- **Facilitate faculty and student mobility programs** to encourage short-term teaching or research visits between institutions, enriching curriculum delivery and fostering innovation.
- **Establish international research centers or labs** jointly operated with partner HEIs, focusing on interdisciplinary and applied research with global relevance.
- **Join global academic consortiums or networks** that promote open research, shared resources, and joint publication opportunities.
- **Institutionalize visiting scholar programs to invite renowned academics** from partner HEIs to contribute to research, curriculum development, and mentoring.
- **Build a culture of openness, competitiveness, and innovation**, aiming to secure a spot among the top global rankings in research outcomes through expanded global collaborations.

Goals	Under Operation	Future Plan
International University Relation	Partial	Full fledge
Global Certification	Partial	Full fledge
Conferences/Seminars	Full fledge	Full fledge
Twining/Dual Programmes	-	Full fledge
Student/Faculty mobility	Partial	Full fledge
Joint Research Initiatives	Partial	Full fledge



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12. Skill Development and Employability

The Skill Development and Employability play a crucial role in generating and disseminating knowledge to drive policy initiatives aimed at enhancing the employability of Indian youth and the workforce. It addresses the critical challenges related to employment, job creation, and livelihood opportunities. The division offers strategic advice and policy guidance to key stakeholders involved in skill development, job creation, and social welfare. It collaborates with the Ministry of Skill Development and Entrepreneurship (MSDE) to shape policies and programs focused on skill development and employment-related reforms.

Skill Development and Employability have become central to preparing students for the evolving job market. With industries rapidly adopting new technologies and methodologies, it is essential that academic programs equip students with not only theoretical knowledge but also practical skills. Institution must integrate with industry-relevant curricula that align with current job trends, focusing on both technical competencies and soft skills like communication, teamwork, leadership, and problem-solving. This is achieved through internships, live projects, and industry collaborations, which offer students real-world experience and insights into their chosen fields.

Career development services, including job placement support, resume-building workshops, and mock interviews, further enhance employability by ensuring students are ready for the competitive job market. Additionally, upskilling initiatives, such as certification programs, online courses, and entrepreneurship support, foster lifelong learning and adaptability, allowing graduates to remain competitive. By fostering a strong connection between academic learning, practical experience, and industry demands, college play a pivotal role in shaping employable, skilled graduates ready to excel in their careers.

Goals

- **Conduct targeted workshops and training sessions** on essential life skills—such as communication, teamwork, and leadership - designed to seamlessly complement and enhance the existing academic curriculum.
- **Collaborate with different college and various departments** to incorporate life skills training into existing courses.



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- **Invite industry professionals** to conduct short-term workshops focused on vital life skills, including problem-solving, adaptability, and emotional intelligence, providing students with practical insights and real-world perspectives.
- **Design short-term certificate programs** centered on specific life skills, enabling students to strengthen their employability by earning industry-relevant credentials alongside their academic degree.
- **Students have access to government-certified skill development programs** via NSDC, PMKVY, MSME, etc.
- **Enhance collaborations with industry partners** to offer real-world projects, internships, and experiential learning opportunities that allow students to actively apply and refine their life skills in practical, professional environments.
- **Create interdisciplinary programs** that integrate life skills with academic learning, promoting critical thinking, adaptability, and problem-solving across diverse real-world scenarios.
- **Host National/International level competitions** centered on leadership, communication, and innovation to promote the practical application and development of essential life skills among students.
- **Provide ongoing training programs** for faculty members to integrate life skills education into their courses, ensuring a comprehensive approach to student development.
- **Collaborate with international institutions** to exchange best practices and incorporate global standards in life skills development.
- **Establish a continuous feedback system with industry partners** to regularly review and update life skills programs, ensuring alignment with changing job market demands and emerging societal needs.



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S. No	Training	Skills / Topics	Under Operation	Future Plan
1.	Soft Skills	Communication Skills	✓	✓
		Problem Solving & Critical Thinking	✓	✓
		Leadership & Teamwork	✓	✓
2.	Verbal Skills	English Language Proficiency	✓	✓
		Public Speaking	✓	✓
3.	Reasoning & Aptitude	Logical Reasoning	✓	✓
		Quantitative Aptitude	✓	✓
4.	Job Readiness	Resume Building & LinkedIn Optimization	✓	✓
		Mock Interviews	✓	✓
		Technical Skills	Programming	✓
6.	Career Guidance Programmes	Foreign Language Training	✓	✓
		GATE Preparations	✓	✓
		Government Job Preparations		✓
		Global Higher Education	✓	✓
7.	Emerging Technologies	industry-recognized certifications short-term training programs on relevant skills		✓
8.	EDC	Host boot camps, Ideathons, and hackathons to encourage entrepreneurial thinking and innovation. Provide mentorship, seed funding, and incubation support for student-led startups. Create a network of investors and industry experts to mentor students in scaling their entrepreneurial ideas	✓	✓



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13. Adoption of Guidelines of UGC's on IDP

Panimalar Engineering College (PEC) embraces the UGC's Institutional Development Plan (IDP) framework to strengthen its academic, administrative, and financial autonomy, positioning itself as a leader in progressive higher education. By implementing these guidelines, PEC aims to set new benchmarks in engineering education while fostering innovation, inclusivity, and sustainable growth.

Key Policy Adaptations

1. Industry-Aligned Curriculum & Practical Learning

- ❖ Strengthen industry-academia collaboration by appointing **visiting/contractual faculty** from leading corporations.
- ❖ Introduce **project-based learning, internships, and live industry assignments** to enhance employability.

2. Faculty Development & Performance Enhancement

- ❖ Implement a fast-track promotion system to reward high-impact research, patents, and industry consultancy.
- ❖ Establish a multi-parameter assessment system for faculty, evaluating teaching, research, and student feedback.

3. Infrastructure & Digital Transformation

- ❖ Upgrade facilities to align with NEP 2020's multidisciplinary approach, introducing new programs in AI, IoT, and Sustainable Engineering.
- ❖ Develop blended and online learning infrastructure, including virtual labs and MOOCs (SWAYAM, NPTEL).

4. Inclusivity & Student Support Systems

- ❖ Establish dedicated cells for:
- ❖ Differently-abled students (accessible infrastructure, Braille-enabled tools).
- ❖ Mentoring & Counseling (career guidance, mental health support).
- ❖ Socio-Economically Disadvantaged Groups (SEDG) (scholarships, skill development).

5. Research, Innovation & Entrepreneurship

- ❖ Strengthen research culture through funded projects, industry collaborations, and IPR support.



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- ❖ Launch a Startup Incubation Center under Section-8 Company to promote student-led ventures.

6. Sustainability & Community Engagement

- ❖ Conduct green audits (energy, water, waste management) to achieve a carbon-neutral campus.
- ❖ Expand NSS activities, partnering with NGOs and local industries for social impact initiatives.

7. Digital Governance & Transparency

- ❖ Adopt E-Samadhan Portal for grievance redressal and UAMP for performance tracking.
- ❖ Enhance digital presence (website, social media) for admissions, placements, and alumni engagement.

8. Financial Sustainability & Revenue Growth

- ❖ Optimize resources through paid training programs, consultancy services, and alumni donations.
- ❖ Revise fee structures every three years to ensure financial viability.

Short -Term Goals (2025-2027)

- **Blended Learning Integration** (MOOCs, virtual labs).
- **Industry-Driven Curriculum Updates** (semester-wise revisions).
- **Faculty Training Programs** (FDPs, AICTE-ARPIT).
- **Startup Incubation Center Launch** (5+ startups/year).

Long-Term Goals (2030)

- **Achieve Multidisciplinary Status** under NEP 2020.
- **Global Research Recognition** through international collaborations.
- **AI & Emerging Tech Leadership** with a dedicated AI training center.

Expected Outcomes

- ❖ **Enhanced employability** through industry-aligned programs.
- ❖ **Increased research output** (patents, publications, funded projects).
- ❖ **Stronger industry partnerships** (placements, consultancy revenue).
- ❖ **Inclusive & sustainable growth** (accessibility, eco-friendly campus).

By adopting UGC's IDP, Panimalar Engineering College will reinforce its reputation as a premier institution, driving academic excellence, innovation, and societal impact.



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14. Accreditation

Accreditation serves as a benchmark for academic excellence, ensuring that Panimalar Engineering College (PEC) meets **national and global educational standards**. By aligning with accreditation policies, PEC will enhance **student employability, institutional credibility, and industry relevance**.

Key Accreditation Policies & Implementation

1. Ensuring Industry-Aligned Education

- ❖ **Curriculum Enhancement:** Regularly update syllabi in consultation with **AICTE, NBA, and industry experts** to meet evolving technological demands.
- ❖ **Skill-Integrated Learning:** Mandate **internships, certifications (Cisco, AWS, Siemens), and project-based assessments** to bridge the theory-practice gap.

2. Boosting Student Enrollment & Retention

- ❖ **Scholarships & Financial Aid:** Offer **merit-based and need-based scholarships**, including interest-free loans for economically disadvantaged students.
- ❖ **Transparent Admission Process:** Digitize admissions with **real-time tracking** and AI-driven counseling for course selection.

3. Continuous Quality Improvement (CQI)

- ❖ **IQAC (Internal Quality Assurance Cell):** Conduct **bi-annual audits** on teaching, infrastructure, and research.
- ❖ **Feedback Mechanisms:** Use **student, alumni, and employer surveys** to refine academic delivery.

4. Credit Transfer & Academic Mobility

- ❖ **MoUs with National/International Universities:** Facilitate **student exchange programs** and credit transfers under **NAAC/NBA guidelines**.
- ❖ **Recognition of Prior Learning (RPL):** Allow working professionals to earn credits via **online courses (SWAYAM, NPTEL)**.

5. Research & Industry Best Practices

- ❖ **Faculty Research Mandates:** Target **10+ Scopus-indexed publications/year** and **2-3 patents annually**.



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- ❖ **Industry Collaborations:** Partner with **TATA, Infosys, and startups** for joint R&D projects.

6. Student Welfare & Support Systems

- ❖ **Health & Insurance:** Provide **group health/life insurance** for students and staff.
- ❖ **Grievance Redressal:** Implement **E-Samadhan Portal** for real-time complaint resolution.

7. Leadership & Governance

- ❖ **Performance-Linked Appraisals:** Tie **faculty promotions** to research, teaching innovation, and accreditation compliance.
- ❖ **Transparent Administration:** Publish **annual quality reports** on the college website.

Operational Goals (2024-2027)

- **NBA/NAAC Reaccreditation** with **A+ grade** for all programs.
- **100% industry internships** for students through **MoUs**.
Digital Credit Transfer System integration with **AICTE's Academic Bank of Credits (ABC)**.
- **Launch of PEC Student Welfare Portal** (scholarships, counseling, insurance).
Annual Green & Energy Audits to meet sustainability benchmarks.

Long-Term Goals (2030 Vision)

1. **Global Accreditation:** Secure **ABET (USA) or IET (UK)** recognition for flagship programs.
2. **Elite Research Hub:** Rank among **India's Top 50 Engineering Colleges** in NIRF.
3. **Zero-Dropout Rate:** Achieve **100% student retention** via mentorship and financial aid.
4. **Smart Campus:** Fully digitized operations with **AI-driven attendance, ERP, and IoT-enabled labs**.
5. **Sustainable Education Model:** **Carbon-neutral campus** powered by renewable energy.



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Expected Outcomes

- **Enhanced employability** (90%+ placements in core/IT sectors).
- **Increased R&D funding** (₹5+ crore/year from industry/government grants).
- **Global student/faculty exchange** (10+ international partnerships).
- Stronger stakeholder trust** (NAAC A++, NBA Tier-I accreditation).

NBA Accreditation Status :



By rigorously implementing accreditation policies, **Panimalar Engineering College** will solidify its reputation as a premier institution, fostering academic excellence, innovation, and social impact.



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15. Ranking Excellence

To elevate the institution's position in national and international rankings. This plan outlines the necessary steps for quality enhancement, operational excellence, and institutional growth that align with UGC's.

Key Policies:

- 1. Improve Student Employability:** Develop and implement training programs, internships, and industry linkages to enhance student readiness for the job market across all streams.
- 2. Promote ICT Awareness:** Provide ICT training for both students and faculty, integrate digital tools and learning platforms to enhance the learning experience.
- 3. Regular Appointment of Quality Faculty:** Ensure recruitment of qualified and experienced faculty members in all disciplines and maintain continuous faculty development programs.
- 4. Bridge Teaching-Research Gap:** Encourage faculty and students to engage in interdisciplinary research, facilitating knowledge transfer between different academic departments.
- 5. Develop State-of-the-Art Infrastructure:** Invest in world-class infrastructure, including smart classrooms, virtual labs, and modern research facilities to support learning and innovation.
- 6. Establish Institute Development Plan Cell:** Create a strategic body responsible for planning long-term growth, managing resource allocation, and aligning the institution's development with UGC guidelines.
- 7. Engagement with NBA, NAAC, NIRF, and Global Rankings:** Actively pursue and maintain accreditations and rankings to improve credibility and visibility at national and international levels.
- 8. Focus on Student Outcomes:** Develop initiatives aimed at improving student outcomes such as placements, entrepreneurship support, and exam preparation for competitive exams (GRE, GATE, UPSC, British Council).
- 9. Conduct Annual SWOC Analysis:** Regularly assess the institution's strengths, weaknesses, opportunities, and challenges to guide continuous improvement strategies.



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10. **Strengthen IQAC:** Make the Internal Quality Assurance Cell (IQAC) the core body responsible for monitoring all excellence initiatives within the institution.

Expected Outcomes:

- **Improved National and International Rankings:** Achieve better positions in prominent national and global rankings, such as NIRF and Quacquarelli Symonds (QS) rankings.
- **Attraction of international Students:** Establish a global reputation that attracts international students through online and hybrid learning offerings, supported by regular audits and quality measures.
- **Enhanced Learning Ecosystem:** Build a robust online and hybrid learning system, making education accessible globally while improving the quality of education delivery.

Operational Goals:

1. **Enhance Employability:** Achieve a significant increase in placement rates over the next two years by strengthening industry connections and introducing more focused career readiness programs.
2. **Achieve 100% ICT Literacy:** Ensure all students and faculty members achieve ICT literacy within the next 3 years through dedicated training and integration of digital tools.
3. **Faculty Excellence:** Ensure the recruitment of high-quality faculty members and enhance their professional development through regular training, research funding, and performance evaluations, to be implemented by the next academic year.
4. **Research-Driven Teaching:** Modernize classrooms, laboratories, and seminar halls to foster teaching methods that incorporate research and innovation, with the goal of having faculty actively engaged in research-driven teaching in 2 years.
5. **Ranking Growth:** Aim for a consistent 10% increase in institutional rankings annually by focusing on academic excellence, research output, and student outcomes.

Long-Term Vision:

- **Top 100 Global Institutions:** Aspire to rank among the top 100 global institutions, ensuring recognition as a leading university in the global academic and research community.



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- **World-Class Infrastructure:** Develop state-of-the-art infrastructure, including smart classrooms, virtual labs, and advanced research facilities to support the evolving needs of students and faculty.
- **Culture of Continuous Quality Improvement:** Foster a culture that emphasizes continuous quality enhancement, ensuring that all academic and administrative processes are regularly evaluated and improved.
- **Global Collaborations:** Build strategic partnerships with 20+ top international universities to enhance global recognition, provide students with exchange opportunities, and promote collaborative research.
- **Increase International Student Enrolment:** Attract a more diverse student body by boosting international student enrolment, enhancing the institution's global visibility and reputation.



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16. Faculty Tracking

Our institution is committed to becoming a future-ready, digitally enabled academic hub and as part of this commitment, we plan to implement the Faculty Tracking System over the next five years (2025 – 2029). This system will seamlessly align with our HR policies and strategic goals, integrating cutting-edge technologies to enhance faculty engagement, operational efficiency, and performance.

Technological Framework:

- **Web Portal and Mobile App:** Ensuring faculty can access the system anytime, anywhere.
- **Cloud Backend (AWS/Azure):** Providing a scalable and secure infrastructure for growth.
- **Dashboards (Power BI/Tableau):** Offering real-time insights and comprehensive reporting.
- **Secure API Integration:** Ensuring smooth connectivity with LMS, HRMS, and Financial systems.

The Faculty Tracking System will digitize and streamline each phase of a faculty member's professional journey at our institution. By integrating HR policies, administrative requirements and strategic goals into one unified platform, simplify recruitment, attendance, performance appraisals and research activities. With a robust tech stack, including web and mobile platforms, this system will bring transparency, accountability and efficiency to all academic and administrative functions, setting the stage for an empowered and future-proof faculty ecosystem.

Recruitment & Onboarding

Recruitment is carried out in accordance with UGC norms. A multi-step evaluation process is followed and faculty members are placed under a two-year probationary period post-appointment.

A digital repository to store and manage job applications, interview evaluations and appointment letters and an onboarding dashboard guides new hires through necessary documentation, institutional ID creation and induction training.



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Recruitment & Onboarding Workflow

Step	Description
Application Submission	Candidates submit through online portal
Shortlisting	Based on qualification and institutional needs
Interview Evaluation	Digital forms for panel input and scoring
Appointment Order	Auto-generated after final approval
Onboarding Process	Document uploads, ID setup, Training Scheduler

Attendance & Leave Management

Faculty attendance will be tracked using biometric systems, ensuring accurate and real-time attendance monitoring for all faculty members. Leave will be categorized into Casual Leave (CL), On-Duty (OD), and Medical Leave (ML). Our system will seamlessly integrate with biometric devices to ensure precise attendance tracking. Applying for Casual Leave, On-Duty, or Medical Leave will be effortless, with an intuitive workflow that will route requests for quick approvals. Each leave type will adhere to institutional policy, ensuring transparency throughout the process. To maintain discipline, the system will send automated alerts for frequent absences or late logins. This smart, responsive approach will manage attendance efficiently while ensuring accountability.

Leave Types & Policy Matrix

Leave Type	Maximum Days/Year	Approval Level
CL	12	HOD
OD	As required	HOD + Principal
ML	15	Medical Certificate + HOD + Principal



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Performance Appraisal

Performance appraisal system is a seamless digital process that empowers transparency and continuous improvement. Faculty members begin by submitting their online self-appraisal, a structured reflection of their contributions throughout the year.

Once submitted, the system automatically routes these appraisals to the Head of the department, the Principal, and students for multi-level feedback. This 360-degree feedback ensures a comprehensive and fair evaluation.

All inputs are then fed into our automated API score calculator, which processes the data based on pre-set weightage. Scores are categorized into three key areas: Teaching, Research, and Institutional Activities. The results are then visualized through interactive dashboards, making it easy to track progress. Faculty can monitor their year-on-year growth in a glance.

Appraisal Component Breakdown

Component	Weightage	Evaluation Source
Teaching	50%	Student Reviews
Research & Development	30%	Publications and Grants
Institutional Activities	20%	Committee, Events and Outreach Activities

Research & Professional Development

Our HR policy will continue to strongly encourage faculty to grow professionally through Higher Studies, Research Projects and Faculty Development Programs (FDPs). A smart Research Output Tracker will be implemented, integrated with platforms like Scopus and Google Scholar. It will automatically update publication data, making the tracking of research impact effortless.

Faculty will be able to maintain a Professional Development Logbook, where they can document every course, workshop, and certification they complete. This will play a vital role in both performance appraisals and career planning. Additionally, a Grant Tracker will



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streamline the entire process of applying for research funding. From submission to sanction and fund utilization, every stage will be monitored within the system.

The system will ensure full transparency in fund allocation and encourage more faculty to actively engage in research. It will serve as a comprehensive framework to help faculty grow, innovate, and lead in their academic journey.

Research Tracking

Metric	Source	Usage
Publications	Scopus, Google Scholar	For appraisals and promotions
FDP Participation	Institutional Records	For development scoring
Grant Applications	Funding Agencies	Track status and fund usage

Teaching & Academic Delivery

As per HR policy, every faculty must deliver a minimum of 180 teaching days annually across classrooms and labs. Our system assigns course loads and tracks real-time lecture coverage, ensuring nothing falls behind. Student feedback tools offer valuable insights into teaching quality. Performance data feeds into smart analytics, measuring effectiveness and learning outcomes. A complete solution for maintaining academic rigor and excellence.

Academic Analytics

Feature	Function
Course Load Tracker	Displays individual faculty load
Lecture Coverage	Monitors completion status
Teaching Feedback	Provides scores from students/peers

Career Advancement & Promotion

Faculty promotions are merit-based, factoring in experience and the availability of sanctioned posts. Our system provides automated promotion eligibility reports, eliminating guesswork and delays. It cross-checks criteria like qualifications, service years and performance scores. A centralized document repository stores essential proofs like Ph.D. degrees, publications and awards



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Promotion Evaluation Criteria

Requirement	Description
Ph.D.	Mandatory for senior roles
API Score	Must meet the minimum threshold
Experience	Based on years of service
Achievements	Awards, contributions, publications

Welfare & Governance

Our institution ensures comprehensive faculty welfare, including EPF, gratuity, insurance, and timely award nominations. Each faculty member has a digital service record, capturing their entire professional history in one place. The system sends alerts for retirement, benefit updates and nomination deadlines. It's designed to keep faculty informed and appreciated throughout their journey. Our institution upholds a strict code of conduct, redressal policies, and service conditions, ensuring a respectful and transparent environment. This maintains integrity and accountability at all levels. Privacy is our priority, and we ensure that every piece of information is securely handled

Welfare Feature

Feature	Purpose
Digital Records	Maintain entire faculty history
Benefit Notifications	Retirement, insurance, gratuity alerts
Award Tracking	Timely nominations and achievements

These innovations will revolutionize how faculty engage with the institution, enhancing operational efficiency across all functions. They will promote job satisfaction, career advancement and consistent performance excellence. By digitizing every phase of the faculty lifecycle from recruitment to promotion the system will streamline processes. Administrative tasks will be minimized, enabling better focus on academic and research priorities. Ultimately, our institution will emerge as a benchmark for smart, faculty-first governance in higher education.



17. Physical Infrastructure

Panimalar Engineering College (PEC), with its sprawling 75.43-acre campus, already stands out for its commitment to sustainability and quality infrastructure. Recognized twice by AICTE for maintaining a clean and green environment, PEC now aspires to elevate its infrastructural capacities in alignment with modern technological, academic, and environmental standards. This plan articulates a comprehensive roadmap to build upon its solid foundation, balancing academic ambitions with student welfare and community engagement.

Campus Digitization and Smart Infrastructure

The vision for a “Smart Campus” is central to PEC’s development. Currently 50% digitized, PEC targets full smart campus integration by 2026-27. This includes widespread IoT integration, high-speed internet, digital attendance systems, and advanced learning management platforms. Classrooms will be equipped with multimedia interfaces, ensuring a hybrid-ready learning environment.

To ensure data security and institutional efficiency, administrative workflows will progressively adopt paperless, cloud-based solutions. These changes will support real-time communication, digital records, and seamless academic operations.

Goals:

- Deploy a unified Learning Management System (LMS) with integrated attendance, assignment tracking, and performance dashboards.
- Upgrade to IoT-enabled smart classrooms with real-time analytics, AR/VR support, and high-resolution digital boards.
- Implement campus-wide AI-powered surveillance and access control systems with facial recognition and emergency alert mechanisms.
- Establish a Centralized IT Command Centre for smart monitoring and response.
- Achieve zero-paper administration through digital governance.

Sustainable and Green Infrastructure

Sustainability is a cornerstone of PEC’s ethos. All newly constructed buildings will adhere to green building principles. This includes:

- Solar panel installations
- Rainwater harvesting
- Efficient water usage



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- Energy-saving lighting
- Sustainable landscaping

This aligns with the institute's continued commitment to winning further recognition in environmental stewardship.

Goals:

- Expand solar capacity to cover **100% of institutional energy needs** by 2030.
- Introduce **Electric Vehicle (EV)** charging stations and convert official vehicles to EVs.
- Launch a "**Green Belt Expansion Program**" with botanical zones and vertical gardens.
- Establish **zero-waste cafeterias** with induction-based cooking, waste segregation, and smart composting.
- Install **campus-wide water meters** with IoT-based monitoring for conservation and recycling.

Academic and Research Development

PEC currently has 93 laboratories and 4 research centres. In alignment with evolving academic requirements, PEC will add 4 new research centres annually and upgrade existing laboratories based on curriculum updates. This consistent expansion will ensure academic relevance and innovative learning experiences.

In parallel, the student-to-computer ratio will be progressively improved from 4:1 to 1:1, supporting personalized and project-based learning.

Goals:

- Set up a **Supercomputing and AI Research Lab** with high-performance infrastructure.
- Increase research centres by **4 per year**, with themes aligned to SDGs and Industry 5.0.
- Establish a **dedicated Centre for Multidisciplinary Studies** for collaborative research across departments.
- Create an **Innovation Library Lab** for emerging tech exploration (AI, blockchain, VR).
- Maintain a **1:1 student-to-computing system** across all departments by 2030.



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Student Facilities and Well-being

With a student-first philosophy, PEC emphasizes an all-encompassing experience: Existing hostel infrastructure (4 for boys and 3 for girls) will expand to match future intake. Dining facilities currently span over 20,000 sq.mt, which is adequate enough for the future requirements too. Games and sports infrastructure, including three playgrounds, will be augmented with one more. Health services include seven health rooms, two doctors, and two nurses, with enhancements based on demand.

Furthermore, PEC's goal is to nurture student wellness and engagement through cultural spaces, innovation hubs, and active sports environments.

Goals:

- Build **one additional boys and girls hostel** with green certifications and smart energy systems.
- Launch a **24/7 health centre with telemedicine support**, emergency care, and psychological counseling services.
- Create a **multicultural convention space** for events, foreign student integration, and global programs.
- Develop a **central sports complex** for hosting regional/national tournaments and athletic training programs.

Community and Administrative Infrastructure

PEC already houses an administrative block for admissions and counselling, with provisions to scale services as new programs emerge. Additional guest accommodations are in the pipeline, with expanded guest house and room capacity already budgeted for.

Faculty and staff infrastructure will scale in line with academic growth, ensuring high-quality workspaces and professional support.

Goals:

- Introduce **AI-powered e-governance tools** for academic and non-academic workflows.
- Implement **centralized grievance redressal portals** and feedback dashboards.
- Expand **faculty housing and staff lounges** with co-working zones.
- Include a **collaborative innovation hub** with office space for faculty startups and incubation.



Library and Learning Resources

The existing library is adequate but will be upgraded in sync with PEC's ICT master plan. Integration with digital repositories, AI-powered search functionalities, and 24x7 access zones are envisioned to support round-the-clock academic exploration.

Goals:

- Upgrade to an **AI-integrated Digital Library** with 24x7 virtual access, chat-bots, and semantic search.
- Set up **Maker Spaces** and interdisciplinary hubs within the library for collaborative innovation.
- Enable **virtual reality-based archives and collections** with interactive tours.
- Integrate **block-chain for knowledge management** and digital certification.

Skill Development Centre

PEC has already established **10 Skill Development Centres** spanning a total of **31,000 sq. ft.**, along with a **5,000 sq. ft. Idea Lab**, serving as key hubs for skill-based, hands-on, and experiential learning. Expansion of vocational training centres will ensure that students are industry-ready, with hands-on exposure to emerging technologies and entrepreneurial ventures.

Goals:

- Expand to include **Sector-Specific Skill Centres** (AI/ML, Renewable Energy, Agri-Tech, FinTech).
- Partner with industry to launch **certified micro-credential programs** and **online modular courses**.
- Establish a **Start-up Street & Student Market (HAAT Model)** to support student enterprises and showcase innovations.
- Enable **collaborative workspaces** and tie-ups with self-help groups for experiential entrepreneurship.



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Proposed Up-gradation and Increase in Infrastructural Facilities



Seminar Halls	Adequate for the Intake			01	01	01
Centre for Advanced Learning and Training	Adequate		Additional Training Hub for Capacity Building			
New Class Rooms	Adequate		Floor Space Available; Class Room Furniture's			
Modernization of Class Rooms	50 % Modernized	75 % Modernized	100 % Modernized	Adequate for the Intake		
New Labs	Adequate		Floor Space Available; Equipments			
Modernization of Labs	Adequate		5	3	Adequate	
Digital Infrastructure	Adequate		Upgradation as per the ICT Plan of the Institute			
Auditorium	Adequate for the Intake			Capacity of 5000 Students		
Hostels	Adequate	1 Girls Hostel	1 Boys Hostel	Adequate		
Administrative Building	Adequate Space Available for University Offices		University Building of 1,16,005 Sq. Ft.			

This phased, sustainable plan positions **Panimalar Engineering College** as a forward-looking academic institution with an emphasis on academic excellence, green responsibility, and technological leadership.



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18. Digital Enablers

The Digital Enablers Strategic Plan is designed to establish the institution as a trailblazer in digital education, cutting-edge research and streamlined administrative operations. By embedding digital technologies into every aspect of academic, research and administrative processes, the plan seeks to elevate the quality of teaching and learning, foster interdisciplinary collaboration and improve institutional efficiency. This comprehensive roadmap outlines clear objectives, strategic initiatives and implementation timeline, ensuring a future-ready, digitally empowered academic environment that supports excellence and engagement across all functions.

Strategic Goals and Initiatives

The primary goal of this Digital Enablers Strategic Plan is to develop an advanced digital enabler infrastructure, foster innovation in teaching and learning, enhance research capabilities, streamline administrative processes, and ensure robust Cyber Security measures. The following strategic goals and initiatives are proposed:

Digital Infrastructure Development

- **Campus-Wide Wi-Fi Upgrades:** Extend and improve Wi-Fi coverage to ensure high-speed internet access in all areas of the campus.
- **Cloud-Based Storage Solutions:** Move to a scalable cloud storage model to facilitate secure and easy access to academic resources.
- **Modernization of Classrooms:** Equip classrooms with smart boards, projectors, and interactive tools to support an engaging and technology-rich learning environment.

E-Learning Enhancement

- **Centralized Learning Management System (LMS):** Develop or upgrade the LMS to provide a unified platform for students and faculty to access course materials, assignments, and discussions.



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- **Integration of Multimedia Content:** Incorporate multimedia resources such as video lectures, simulations, and interactive tools into the curriculum.
- **Faculty Training:** Conduct regular faculty training sessions to familiarize them with modern teaching technologies and pedagogies.

Research Support Systems

- **High-Performance Computing Facilities:** Build a state-of-the-art computational infrastructure to support research activities, particularly in fields such as AI, machine learning, and data science.
- **Data Analytics Platforms:** Integrate tools like big data platforms and AI-based analytics systems to assist researchers in processing and analyzing large datasets.
- **Open Access Repositories:** Establish open access repositories for research outputs, promoting knowledge dissemination and collaboration.

Administrative Automation

- **Enterprise Resource Planning (ERP) System:** Implement an ERP system to integrate all administrative functions such as student registration, grade management, human resources, and finance.
- **Automation of Routine Tasks:** Automate manual processes like payroll, attendance tracking, and procurement to improve efficiency and reduce human error.
- **Student Information System Integration:** Ensure the seamless integration of the Student Information System (SIS) with other administrative systems.

Cyber Security and Data Governance

- **Multi-Factor Authentication (MFA):** Implement MFA for all critical systems to enhance security.
- **Regular Security Audits:** Conduct frequent security audits to identify vulnerabilities and patch them promptly.
- **Data Privacy Policies:** Develop and enforce strict data privacy policies to protect sensitive student and faculty information.



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Innovation in Teaching and Learning

- **AI-Driven Learning Tools:** Integrate AI technologies to personalize learning experiences, adapting to the individual needs of students.
- **Collaborative Learning Platforms:** Build platforms that support virtual collaboration, group assignments, and peer learning.
- **Blended Learning Models:** Foster blended learning models that combine in-person and online education for greater flexibility and accessibility.

Strategic Goals and Timeline

Strategic Goal	Initiatives	Timeline
Digital Infrastructure Development	Wi-Fi Upgrades, Cloud Storage, Classroom Modernization	2025-2026
E-Learning Enhancement	LMS upgrade, Multimedia Integration, Faculty Training	2025-2028
Research Support Systems	HPC facility, Analytics tools, Open Repositories	2026-2028
Administrative Automation	ERP, Task Automation, SIS integration	2025-2028
Cyber Security & Data Governance	MFA, Security Audits, Data Privacy Policies	2025-2026
Innovation in Teaching & Learning	AI-driven tools, Collaborative Platforms, Blended Learning	2025-2030

Implementation Roadmap

The Digital Enablers Strategic Plan will be implemented in four phases over a five-year period. Each phase is designed to address specific goals, with a focus on sustainability and scalability.

Infrastructure Assessment, Procurement and Faculty Training

- Conduct a detailed assessment of current infrastructure.



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- Procure necessary hardware and software for the planned upgrades.
- Provide initial faculty training on basic digital enabler tools.

Development and Deployment of LMS, ERP and Research Platforms

- Develop or upgrade the Learning Management System (LMS).
- Begin deployment of ERP and automation systems.
- Set up the first phase of the research support systems.

Full-Scale Implementation of Digital Tools

- Full deployment of digital tools across the campus.
- Continuous faculty and staff training programs.
- Enhancement of Cyber Security measures.

Evaluation and Action Taken

- Review the success of digital enabler initiatives based on feedback and performance indicators.
- Adjust strategies based on evaluation results.
- Continue to innovate and adopt emerging technologies.

Phase	Timeline	Key Activities
Phase 1	2025–2026	Infrastructure Assessment, Procurement of Digital Tools, Initial Faculty Training
Phase 2	2026–2028	Development of LMS and ERP systems, Deployment of initial research support tools
Phase 3	2028–2029	Campus-wide deployment of digital tools, Enhancement of Cyber Security measures
Phase 4	2029–2030	Review of Implementations, Performance Evaluation, and Strategic Refinements



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Monitoring and Evaluation

- **Student Satisfaction:** Measure the increase in student satisfaction with digital tools and resources.
- **Administrative Efficiency:** Track the reduction in time for administrative tasks such as student registration and grade processing.
- **Research Output:** Monitor the growth in research publications and collaborative projects facilitated by digital enabler tools.
- **Faculty and Staff Training:** Track the number of faculty and staff completing digital enabler-related training programs.

Evaluation Methods

- Conduct annual surveys to gather feedback from students, faculty, and staff.
- Perform regular audits of digital enabler systems to ensure effectiveness and security.
- Benchmark progress against similar institutions to identify areas for improvement.

Use of Digital Enabler Tools in the Teaching-Learning Process

The use of digital enabler tools in education has the potential to revolutionize the teaching and learning process by enhancing student engagement, supporting personalized learning, and enabling real-time feedback and assessment.

- **Enhance Student Engagement:** Use multimedia tools and interactive platforms to make learning more engaging.
- **Facilitate Personalized Learning:** Use AI-driven tools to provide customized learning experiences for students.
- **Support Blended Learning Models:** Combine traditional classroom methods with online learning for greater flexibility.
- **Enable Real-Time Feedback and Assessment:** Use digital platforms to provide instant feedback on assignments and assessments, improving student learning outcomes.



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19. Outreach and Sustainability Practices

In response to the growing need for environmentally responsible and socially connected institutions, our institution envisions becoming a **Centre of Excellence in sustainable education and outreach**. The objective is to instill sustainable values across all levels—campus operations, curriculum, community partnerships, and student engagement.

The plan aims to promote **“Campus to Community” sustainability**, embedding environmental stewardship and social responsibility in the institutional DNA, aligned with **SDGs (Sustainable Development Goals)**, **AICTE’s Green Campus Guidelines**, and **NEP 2020**.

Goals and Objectives

- Promote environmental consciousness through campus initiatives and green infrastructure.
- Strengthen institutional-community partnerships through outreach programs.
- Integrate sustainability into the curriculum and student projects.
- Empower students to become change-makers in society.

Key Strategies

A. Sustainability on Campus

- Implement **waste management systems** (segregation, composting, and e-waste recycling).
- Set up **solar power units, rainwater harvesting, and LED lighting**.
- Promote green transportation: bicycles, electric vehicles, and shuttle services.
- Encourage **plastic-free campus** policies.

B. Curriculum and Capacity Building

- Introduce value-added courses and workshops on sustainability, climate action, and green technologies.
- Encourage final-year and minor projects focused on sustainable innovation.
- Organize faculty development programs (FDPs) on environmental education.

C. Outreach and Community Engagement

- Partner with local bodies for awareness drives, clean-up campaigns, and skill development in sustainability.



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- Conduct **village adoption programs** and NSS outreach focusing on water conservation, energy saving, and rural innovation.
- Facilitate student internships with NGOs and environmental startups.

Implementation Framework

A cross-functional **Sustainability and Outreach Committee** will be formed with faculty, students, and administrative staff to monitor implementation, reporting, and continuous improvement.

Quantifiable Action Plan

Sustainability Initiatives on Campus

Initiative	Year 1	Year 3	Year 5
Solar Energy Installed (kW)	25 kW	50 kW	75+ kW
Plastic-Free Campaigns	2	4	6
Rainwater Harvesting Units	2	4	6
Compost Units for Organic Waste	1	3	5
Number of Green Audit Reports	1 (Baseline)	2	3

Outreach & Community Engagement

Activity	Year 1	Year 3	Year 5
Villages/Schools Adopted	3	4	5
Awareness Drives Conducted	3	6	10+
NSS/NCC Sustainability Projects	5	10	15
Student Volunteers Involved	300+	500+	1000+

Curriculum and Capacity Building

Initiative	Year 1	Year 3	Year 5
FDPs/Workshops on Sustainability	2	4	6
Courses with Sustainability Modules	3 departments	5 departments	All departments
Student Projects on Green Innovation	10%	25%	50%



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Monitoring & Evaluation

- Annual **Green Campus Audit** and **Social Impact Report**.
- Regular tracking of energy and water usage.
- Student feedback and community partner evaluations.
- Integration of outreach and sustainability KPIs in IQAC metrics.

Expected Outcomes

- A sustainable and energy-efficient campus.
- Stronger community ties through impactful outreach.
- Eco-conscious graduates equipped to lead green change.
- Recognition as a model institution in sustainability and social responsibility.

Green
CAMPUS

