

# Hindustan College of Science & Technology, Mathura

## Strategic Plan

[2023] – [2028]

25-08-2023

### 1. Executive Summary

The Hindustan College of Science & Technology, Mathura, established in 1996 and affiliated with Dr. A.P.J. Abdul Kalam Technical University (AKTU), Lucknow, envisions becoming a leading center of academic excellence and innovation. With a strong commitment to fostering a culture of knowledge, research, and holistic development, the college is embarking on a **five-year strategic plan (2023-2028)** to align its mission with emerging global challenges and opportunities in education and technology. The Strategic plan is directly align with institute perspective plan.

#### Vision and Mission

- **Vision**

HCST strives to impart a holistic, knowledge-centric environment to serve humanity by providing research-oriented technical education to nurture global leaders and entrepreneurs.

- **Mission**

1. Create an ecosystem to foster a culture of innovation, research, academic excellence, and entrepreneurship.
2. Nurture technically competent and socially committed global leaders with high moral and ethical values.
3. Impart outcome-based education to facilitate students' holistic development.

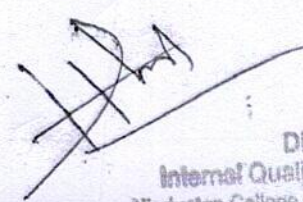
- **Core Values**

Innovation, Excellence, Integrity, Inclusivity, Lifelong Learning, Sustainability.

#### Strategic Objectives

1. **Enhancing Academic Excellence:** Achieve NBA accreditation for key branches, especially Computer Science, and strengthen value-added courses to complement the AKTU curriculum.
2. **Industry Integration and Research:** Expand research infrastructure, including Center-of-Excellence (CoE) AI, Robotics, Electric Vehicles and IoT labs, to promote innovation and industry collaboration.
3. **Student Development:** Foster employability and entrepreneurship through training programs, internships, and skill enhancement initiatives.

  
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4. **Sustainability and Growth:** Invest in sustainable campus development, technology-enabled learning, and global partnerships.

### **Key Highlights of the Plan**

- Introduction of cutting-edge training programs (such as on AI, Robotics, Electric Vehicle) to enhance technical skills and research capabilities.
- Focus on NBA accreditation and academic program enrichment to ensure alignment with national and global quality standards.
- Collaboration with industry leaders to provide students with exposure to real-world applications and innovations.
- Holistic student development programs to support leadership, critical thinking, and ethical decision-making.

### **Expected Outcomes**

- Recognition as a center of excellence in technical education by achieving top rankings and accreditations.
- Improved graduate employability and entrepreneurial success, driving impactful contributions to society.
- Strengthened partnerships with leading industries and academic institutions globally.
- A sustainable and future-ready campus that supports advanced learning and research.

This strategic plan is a testament to Hindustan College of Science & Technology's commitment to driving transformative education and empowering the next generation of leaders and innovators.

## **2. Context and Situational Analysis**

### **2.1 Current State**


- Hindustan College of Science & Technology (HCST), Mathura, was established in 1996 as a pioneering institution for technical education in Uttar Pradesh. Affiliated with Dr. A.P.J. Abdul Kalam Technical University (AKTU), Lucknow, HCST offers 8 undergraduate and two postgraduate programs in engineering and management. The college campus, located amidst the cultural heritage of Mathura, spans over 29.3 acres, providing a serene and conducive environment for academic excellence. With a student population exceeding approximately 1000 and a diverse faculty base, HCST is dedicated to nurturing well-rounded professionals equipped to address global challenges.


### **2.2 SWOT Analysis**

#### **Institute Strengths**

i. **Infrastructure and Research Facilities:** The institute offers excellent infrastructure and research facilities.

ii. **Research Unit:** An official research unit facilitates collaboration with external students on PhD research projects.

  
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ii. **Entrepreneurship Support:** The HCST Innovation and Incubation Forum provides support for student entrepreneurship initiatives.

iv. **Professional Development:** A Professional Development Program nurtures diverse skills among students.

v. **Ethical Education:** The institute hosts a Nodal Centre for Human Values and Ethics.

vi. **Cultural Engagement:** A cultural centre with a large auditorium encourages extracurricular involvement and cultural activities.

#### **Institute Opportunities:**

i. **Faculty Development:** Providing pathways for non-PhD faculty to pursue advanced degrees can improve teaching quality.

ii. **Talent Acquisition:** Hiring faculty with strong research backgrounds enhances the institution's research capabilities.

iii. **Alumni Engagement:** Strengthening alumni connections offers support and collaboration opportunities for current students and faculty.

iv. **Infrastructure Development:** Upgrading lab facilities improves hands-on learning experiences for students and facilitates impactful research.

v. **Quality Assurance:** Implementing a quality framework ensures high standards across institutional processes.

#### **Institute Threats:**

i. **Faculty Recruitment:** Attract faculty with research and industry expertise in emerging technologies.

ii. **Enrolment Trends:** Experience declining enrollments in core branches due to changing demographics.

iii. **Student Attraction:** Face challenges attracting top students due to increased competition.

iv. **Curriculum Control:** Lack control over the curriculum due to affiliation with AKTU.

v. **Placement Concerns:** Ensure quality placements for students in core branches and other disciplines.

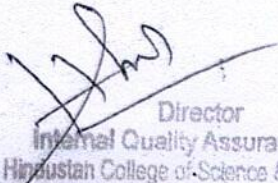
vi. **Funding Sources:** Seek funding from various government and non-governmental agencies

#### **Institute Weakness:**

i. **Faculty Qualifications:** The institute has a scarcity of faculty members holding PhDs and lacks a significant number of faculties with extensive research experience.

ii. **Industry Collaborations:** There are few partnerships between the institute and industries, limiting opportunities for practical engagement and applied research.

iii. **Financial Support:** The institute receives minimal funding from government and non-governmental sources, potentially hindering research and program development.

  
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iv. **Student Enrolment:** The institute attracts fewer students to its core academic programs, possibly indicating a need for enhanced program offerings or marketing strategies.


### 3. Strategic Priorities

#### 3.1 Academic Excellence

- **Goal:** Revise curricula to include cutting-edge technologies like AI, Machine Learning, IoT, Electric vehicles, Robotics and automation. Revise and modernize the curriculum to align with National Education Policy (NEP) 2020.
- **Key Actions:**
  - Form curriculum review committees.
  - Integrate interdisciplinary courses and certifications.
  - Regular interaction with industry leaders through Industry Institute Interaction cell (IIIC) of HCST.
  - Enhance Industry Collaborations.

#### 3.2 Research and Innovation

- **Goal:** Establish research labs to promote advanced studies and exploration. Foster innovation and drive the generation of impactful patents and securing funding from governmental agency by 2028.
- **Key Actions**
  - Secure Funding for Research Projects:**
    - **Identify Funding Sources:** Collaborate with agencies like the Department of Science and Technology (DST), Ministry of New and Renewable Energy (MNRE), and other national and international research bodies to secure funding for innovation and research in renewable energy, AI, robotics, and related fields.
    - **Grant Writing Workshops:** Conduct training programs to help faculty and researchers write successful proposals, aiming to secure grants for cutting-edge research.
    - **Industry Partnerships:** Establish industry collaborations to co-fund and sponsor applied research projects, particularly in AI, EV, and robotics. Focus on attracting investment from green energy and tech industries.
    - **Corporate Social Responsibility (CSR) Projects:** Engage with industries for CSR funding specifically for the mushroom cultivation room, plant tissue culture lab, and sustainability-driven projects.
  - Encourage Faculty and Student Publications:**
    - **Publication Incentives:** Provide financial incentives or recognition for faculty and students who publish research in reputed journals or present at high-impact international conferences.
    - **Research Collaboration:** Encourage collaborative research projects with other reputed institutions, both within India and internationally, to increase the quality and impact of publications.
    - **Open Access Journals:** Set up a platform for publishing in open-access journals to boost the visibility of research.
  - Organizing International Conferences, FDPs, and Workshops:**
    - **Host International Conferences:** Organize annual international conferences focusing on the latest trends in renewable energy, AI, EVs, robotics, and

  
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related technologies. Invite global experts to speak and collaborate with industry leaders.

- Faculty Development Programs (FDPs): Conduct regular FDPs to train faculty members in the latest technological advances and pedagogical strategies, especially in emerging fields like AI, robotics, and renewable energy.
- Workshops for Students and Industry Professionals: Organize skill-building workshops in partnership with global tech giants, industry professionals, and start-ups. Focus on hands-on experience in AI, robotics, EVs, and green technology.
- Hackathons and Competitions: Host hackathons, coding challenges, and robotics competitions to encourage innovation and problem-solving among students.

### 3.3 Infrastructure and Resources Upgrades

- Goal: Upgrade laboratories with state-of-the-art equipment by 2028.
- Key Actions:
  - Secure grants for infrastructure improvement.
  - Partner with industries for lab sponsorships.
  - Modernized Class rooms with modern facility such as Smart board.

### 3.4 Student Development

- Goal: Enhance placement readiness and equip students with essential skills for career success.
- Key Actions:
  - Conduct aptitude and technical skill assessments each semester.
  - Organize regular workshops to develop students' soft skills and professional competencies
  - Provide personalized training programs based on PPCM results.


### 3.5 Placement and Industry Collaboration

- Establish partnerships with startups, service companies, core engineering firms, and research institutions to create a wide range of placement opportunities tailored to students' specific interests and career goals. These collaborations will allow students to explore diverse career paths across industries such as technology, engineering, research, and services.
- Collaborate with industry to organize job fairs, campus recruitment drives, and internship, ensuring that students gain relevant work experience and are well-prepared for the job market upon graduation. This approach will align their academic learning with industry demands, improving their employability and career prospects.

(Detailed strategic plan for placements is enclosed in Annexure-1)

### 3.6 Global Outreach

- Goal: Establish partnerships with 5 international universities by 2028.
- Key Actions:

  
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- o Sign MoUs for student exchange programs.
- o Participate in international conferences and collaborations.

#### 4. Goals and Key Performance Indicators (KPIs)

Strategic Objective	Goal	KPI	Target Year.
Academic Excellence	Revise curriculum for industry alignment	25 % of updated courses	2025
Research and Innovation	Increase research funding	50 Lakh research grants per year	2025
Student Development	Improve placement rates	Placement rate (90%)	2025
Infrastructure and Resources	Upgrade all computer labs	8 labs	2025

#### 5. Implementation Plan

Action Item	Responsibility	Timeline	Resources Required
Curriculum review	Academic Council	Odd Semester, 2025	Faculty, Industry Inputs
Research center establishment	R&D Committee	Odd Semester, 2027	Funding
Global partnership outreach	IIC, R&D Committee	Odd Semester, 2028	Travel, Networking


#### 6. Monitoring and Evaluation

- Establish a Strategic Planning Committee.
- Conduct quarterly reviews of progress using KPIs.
- Use feedback from stakeholders to refine the plan.

#### 7. Communication Plan

- Share the strategic plan with stakeholders (faculty, students, parents, and industry-partners) through:
  - o Regular meetings.
  - o Email newsletters.
  - o College website and social media updates.

  
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## Yearly Strategic Action Plan for Students Placements: T&P Dept.

### **Strategic Plan or Strategies:**

T&P Dept is submitting some new initiatives under strategic Plan or strategies through which we can beat the upcoming challenges in the current job market and prepare the students as per industry need. Those points are as below mentioned:-

### Yearly Roadmap for Strategic Plan for Student Placements

#### Quarter 1: Foundation & Assessment

##### **1. Industry Needs Analysis**

- Conduct surveys and consultations with industry leaders to identify evolving skills and roles in demand.
- Focus on domains like AI, Data Science, Sustainability, and Remote Work Tools.

##### **2. Skill Gap Analysis:**

- Assess students' skill levels and identify gaps between current abilities and market requirements.
- Organize orientation programs to inform students of industry expectations.

##### **3. Digital Infrastructure Upgrade:**

- Invest in virtual tools for placements (online testing platforms, virtual interview suites, and AI-driven resume shortlisting).
- Establish an online portal for students to access placement updates, training schedules, and resources.

##### **4. Alumni Networking:**

- Strengthen alumni relationships to bring industry connections and mentorship opportunities.
- Organize quarterly alumni webinars on career guidance and job market trends.

#### Quarter 2: Skill Development & Industry Engagement

##### **1. Customized Training Programs:**

- Partner with industry experts to design domain-specific certification programs.
- Focus on hybrid work skills like remote collaboration, project management tools, and advanced tech tools.

##### **2. Soft Skills Workshops:**

- Conduct mandatory workshops on communication, team collaboration, and leadership.
- Include modules on emotional intelligence and adaptability for workplaces.

##### **3. Industry Collaborations:**

- Establish long-term partnerships with 15+ companies for internships, live projects, and placements.
- Initiate bi-annual "Industry Meetups" where students can network with recruiters.

##### **4. Launch Incubation Programs:**

- Collaborate with startups and innovation hubs to provide entrepreneurial mentorship.
- Introduce a dedicated fund for students to develop and pitch startup ideas.

#### Quarter 3: Placement Readiness & Mock Drives

##### **1. Mock Placement Drives:**

- Simulate placement processes, including aptitude tests, group discussions, and interviews.
- Provide detailed feedback to help students improve performance.

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**2. Resume Building & Profile Optimization:**

- Conduct sessions on professional resume building and LinkedIn optimization.
- Provide AI-driven resume review services to ensure ATS compatibility.

**3. Internship Programs:**

- Facilitate short-term internships or shadowing opportunities for real-world exposure.
- Make internships a mandatory credit-based activity for final-year students.

**4. Placement Readiness Certificate:**

- Issue certificates for students who complete all training modules and mock placement programs.

**Quarter 4: Placement Drives & Follow-ups**

**1. Company On boarding for Placement Drives:**

- Schedule placement drives with diverse sectors, ensuring opportunities in both core and emerging fields.
- Implement hybrid placement models with both online and offline interview options.

**2. Placement Analytics Dashboard:**

- Launch a dashboard to monitor placement statistics, recruiter feedback, and success rates.
- Use data to refine the placement process for subsequent years.

**3. Post-Placement Support:**

- Offer post-placement mentoring to help students transition into their roles successfully.
- Provide ongoing learning opportunities to alumni, encouraging lifelong engagement.

**4. Placement Review:**

- Conduct a detailed review of placement outcomes with student and recruiter feedback.
- Update the roadmap for the next academic year based on insights gained.

**Improvisation Strategies for Strengthening Quality Placements:**

**1. Leverage Technology:**

- Use AI and machine learning for targeted skill matching and job mapping.
- Implement virtual reality (VR) simulations for interview preparation.

**2. Global Placement Opportunities:**

- Partner with multinational corporations to create global career pathways for students.
- Include cultural adaptability training and foreign language courses for international placements.

**3. Mentorship Programs:**

- Pair students with industry mentors for personalized career guidance.
- Conduct peer mentorship programs for juniors by recently placed alumni.

**4. Employer Branding:**

- Build relationships with reputed firms and create customized hiring models.
- Highlight successful placement stories in institution branding campaigns.

**5. Diversity and Inclusion:**

- Focus on providing equal opportunities across gender, backgrounds, and abilities.
- Work with companies committed to inclusive hiring practices.

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**Continuous Feedback Loop:**

Collect regular feedback from recruiters on student performance.  
Use feedback to iterate and enhance training and curriculum alignment.

By following this roadmap and focusing on continuous improvement, the placement department can strengthen its capability to deliver quality outcomes while adapting to the new realities of the current job market.

Suggestions would always be appreciated.

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General Manager - T&P



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