

NED UNIVERSITY OF ENGINEERING & TECHNOLOGY

STRATEGY

Innovate. Illuminate. Elevate.



A CENTURY OF CREATING IMPACT

1920

On August 29, 1921, College Principal C.S Shahani initiated a concerted effort to get Engineering Degree classes started to meet demands of Civil Engineers on the project for completion of the Sukkur Barrage in undivided India.

Donations started coming in from Puribai and Becharbai Trust, Vishandas Fatehchand Brothers and one huge donation (for that time) of Rs.150,000 from Mr. Nadirshaw Edulji Dinshaw.

After construction of new college buildings and laboratories, the college started as Prince of Wales Engineering College, but later renamed as NED Civil Engineering College in the memory of Nadirshaw Edulji Dinshaw.

On May 23, 1923, provisional affiliation with University of Bombay was granted with permanent affiliation taking place in 1927, which continued till 1947.

1930

Classes for electro-mechanical discipline also started alongside Civil Engineering.

1940

Fourth block was completed containing classrooms and a drawing hall on the first floor in 1945.

In 1947, Pakistan came into being. The College was renamed as NED Government Engineering College and affiliated with the University of Sindh.

1950

In 1951, the affiliation was transferred to the University of Karachi.

Started offering separate degrees in Mechanical and Electrical Engineering disciplines in 1954.

1970

Shifted to NED New Campus at University Road in 1975.

Engr. A.M. Akhoond, became Chairman, Pakistan Engineering Council in 1975. He later became the 1st Vice-Chancellor of NED University.

NED gets established as a University by an Act of Sindh Parliament on 1st March 1977.

Ashraf Habibullah, upon founding the privately held company Computers and Structures, Inc. in 1975,co-created the first structural-engineering software.

NED University started a Master of Science in Civil Engineering programme in 1979-80

1960

In 1964 a comprehensive plan was prepared to shift the college from its location in the congested downtown area to a new site adjoining the University of Karachi. The project was carried out with the assistance of the World Bank which provided Rs.118 millions in two phases.

Asfia Aleem became the first lady engineer of Pakistan by graduating from the NED University.

1980

Mohammed Ali Shehki graduated from NED in 1981, a popular singer with various hits including "mein bhi Pakistan hoon" and "Teray ishq mein jo doob gaya"

NED University started Bachelor of Computer Engineering in 1984 – a first such programme in Pakistan

Masters degree programme in Electrical Engineering also started in 1984

Engr. Illahi Bux Soomro, an NED alumnus and one of the principals of NED Engineering College became Chairman, Pakistan Engineering Council in 1985.

1990

NED old campus (later termed as city campus) was listed as protected heritage under Sindh Cultural Preservation Act 1994.

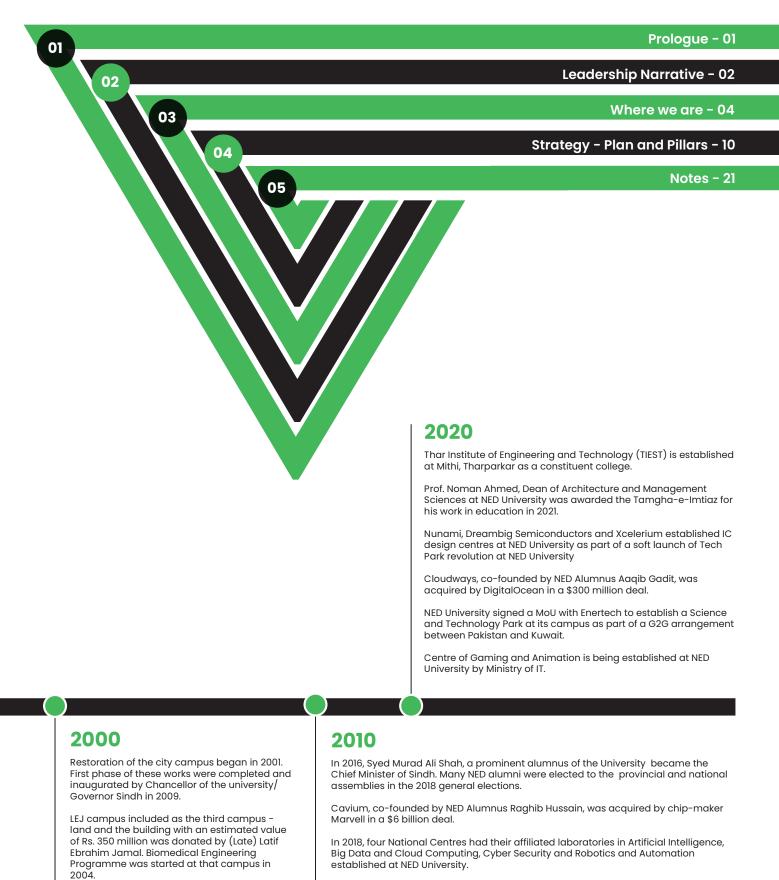
Saeed Anwar, an NED alumnus, achieved the highest ODI score of 194 runs against India in 1997 at Chennai.

Dr. Sherwani, a successful Silicon Valley entrepreneur, won the prestigious Intel achievement Award in 1997 for his architectural work on the Intel microprocessor design methodology and design environment used in several microprocessors.

Engr. Illahi Bux Soomro, an NED alumnus, became Speaker of the National Assembly of Pakistan in 1997.

Safwan Shah, founded Infonox which pioneered payment aggregation and automated merchant acquiring in 1999.

CONTENTS



In 2018, National Incubation Centre Karachi was awarded by Ministry of IT and inaugurated at NED University in partnership with LMKT.

195 acres of land is allocated to NED University in the Education City.

President's Pride of Performance Award conferred upon Prof. Sarosh Hashmat Lodi, present Vice Chancellor in 2019.

LEADERSHIP NARRATIVE









It is with immense pride and pleasure that I extend my warmest greetings to you on behalf of NED University of Engineering & Technology. As the Vice Chancellor of this esteemed institution, it is both an honor and privilege to present this strategic outlook, which charts our course for the future.

Over the years, I have witnessed firsthand the profound impact of education in transforming lives. NED University has evolved into a dynamic academic community, fostering excellence, innovation, and societal change. Our commitment to providing a comprehensive educational experience remains steadfast, empowering our students to emerge as leaders and catalysts for progress.

This strategic document embodies our collective vision as we navigate through an era marked by rapid technological advancements and global complexities. It stands as a testament to the dedication of our faculty, staff, students, and stakeholders, whose contributions have shaped the trajectory of our institution.

At NED University, we understand that a world-class education transcends disciplinary boundaries. Through interdisciplinary collaborations, pioneering research, and innovative teaching methods, we aim to equip our students with the skills and knowledge needed to thrive in an increasingly interconnected world.

Our strategic roadmap delineates key priorities and initiatives, reflecting our commitment to academic excellence, research impact, community engagement, and global outreach. Aligned with our core values, these focus areas underscore our mission to cultivate a vibrant intellectual ecosystem that fosters individual empowerment and societal advancement.

As we embark on this transformative journey, we are mindful of the challenges that lie ahead. However, with a firm foundation rooted in our rich heritage spanning over a century, coupled with our resilience and adaptability, we are confident in our ability to navigate these challenges successfully.

I extend my deepest gratitude to all those who have contributed to the development of this strategic document. Your dedication and commitment have been instrumental in shaping its content and direction. I urge all members of our university community and our valued partners to actively engage with the strategies outlined herein, as together, we strive towards our ambitious goals and collective vision.

I am filled with excitement about the possibilities that lie ahead, and the enduring impact NED University will continue to make. With unwavering determination, we stand poised to redefine the boundaries of knowledge and education, fostering innovation and transforming lives for generations to come.

Thank you for your unwavering support and commitment to NED University. Together, let us embrace this strategic roadmap and embark on a journey towards a future brimming with boundless possibilities.

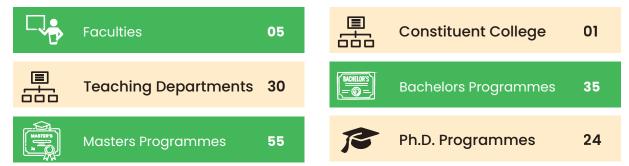
Sincerely,

Dr. Sarosh H Lodi Vice Chancellor



WHERE WE ARE

PROGRAMMES OFFERED



FACULTY COUNT

FACULTY	MALE	FEMALE	TOTAL	FACULTY	MALE	FEMALE	TOTAL
Professors	44	04(8%)	48	Research Staff	111	70 (39%)	181
Associate Professors	37	20 (35%)	57	PhD Faculty	183	74 (29%)	257
Assistant Professors	151	80 (35%)	231	Number of PhD enrolled faculty	40	15 (27%)	55
Lecturers	112	107 (49%)	219	Number of PhD addition this year		-	11
Professors	344	211 (38%)	555	International faculty members	·s –		34
				Number of visiting faculty members at UG and PG		-	562

STUDENT ENROLMENT

PROGRAMMES	MALE	FEMALE	TOTAL
Undergraduate Programmes	5,241	4,196 (44%)	9,437
Enrolment in TIEST	76	25 (25%)	101
Masters Programmes	2,017	792 (28%)	2,809
PhD Programmes	108	68(39%)	176
Total Enrolment	7,442	5,081 (41%)	12,523

SCHOLARSHIPS AND FINANCIAL ASSISTANCE

TOTAL AWARDEES – 3,523 Students			AMOUNT (PKR.) - 236.36 Million		
FUND	MALE	FEM	IALE	TOTAL	AMOUNT
Private Funded	684	59	92	1,276	Rs. 95,524,026
Maa Jee Scholarship	80	12	25	205	Rs. 17,884,000
Ehsaas Programme	188	15	54	342	Rs. 39,361,500
HEC Scholarship	154	16	64	318	Rs. 31,800,000
Zakat & Ushr	54	4	6	100	Rs. 10,039,000
Sindh HEC	09	1	6	25	Rs. 5,750,000
Admission Support (Financial Assistance)	63	9	6	159	Rs. 6,123,500
Semester Support (Financial Assistance)	06	0	6	12	Rs. 393,500
Duty Society	625	28	35	910	Rs. 18,929,400
PhD Fellowships		17	76		Rs. 10,560,000



RESEARCH CENTRES

Advanced Traffic Lab for Analytics and Simulation (ATLAS)	Smart City Lab, NCAI	National Centre for Cyber Security
Centre for Affordable Housing and Sustainable Built Environment	Neurocomputation Lab, NCAI	Electronic Design Centre
Centre for Advanced Studies in Renewable Energy (ASURE)	National Incubation Centre Karachi	K Electric Lab
Norwegian Centre for	National Centre for Robotics	Centre for Software Research
Petroleum Studies	and Automation	and Development (CSRD)
Advanced Materials	Instrumentation	DICE Energy
Testing Lab	Centre	Centre
Panjwani Hisaar Water	High Performance	National Centre for Big
Institute	Computing Centre	Data Analytics
Cowasjee Earthquake	NED University Virtual	Building Information
Centre	Reality Centre	Modelling Centre
Product Development Centre	Heritage Cell	NED University Fire Lab
Centre for Quantum	Asma M. Hashmi	Centre for
Technologies	STEM Centre	Nano Technologies
Centre for Automation	Centre for Gaming	Centre for Environment
and Industry 4.0	and Animation	and Social Sustainability

RESEARCH FUNDING

Amount Proportion	Number of Funded Projects	Funding (PKR million)
Total on-going projects	253	2,077
National	226	1,358
International	27	719
Research	216	1,198
Consultancy/ Industrial Projects	31	383
National Centers	6	496

PUBLICATIONS

As seen below, Scopus indexed research publications over the last few years published by NED University faculty have been increasing.



INTERNATIONALIZATION

NED University has established collaborations with numerous international institutions across various regions worldwide, including North America, Europe, Australia, Indonesia, Malaysia, and China. Currently, there are more than thirty Memoranda of Agreement/ Memoranda of Understanding signed with these partner institutions. The key areas of collaboration encompass student and faculty mobility, joint supervision of PhD programmes, organization of conferences, collaborative publications, and exploration of funding opportunities jointly.



COLLABORATION AND LINKAGES



GOVERNMENT AGENCIES

Leveraging its pool of experts across various fields, NED University has consistently played a facilitating role for government agencies, offering them solutions to their challenges. The University's experts have extended their support not only to local and provincial governments but also to the federal government, as well as autonomous bodies such as the Pakistan Engineering Council, Higher Education Commission, and Sindh Higher Education Commission.

INDUSTRIES

Due to its esteemed reputation and strategic location in the industrial hub of the Country, NED University has successfully fostered partnerships with numerous industries in the City. The primary objective is to provide advanced laboratory facilities for testing purposes and assist industries in resolving production and shop floor-related challenges they encounter. Currently, there are a significant number of industries directly collaborating with the University across its diverse departments.





ALUMNI AND PHILANTHROPISTS' ENGAGEMENT

The NED Alumni maintains strong connections with their alma mater and consistently offers support through various means such as scholarships, improving infrastructure, and implementing solar power on campus. Additionally, numerous philanthropists have contributed to the University's infrastructure development. Thanks to the contributions from alumni and philanthropists, the University has been able to upgrade computer labs and establish smart classrooms.

02

RANKINGS



Ranking in Sustainability and Capacity Building





STRATEGIC PLAN

The purpose of this strategy outlook is to outline a five year plan for the development and advancement of NED University. Our institutional strengths serve as its foundation upon which 12 strategic pillars are constructed to shape our strategy. We have taken the year 2024 as a baseline, while setting targets over the period of five years to 2028.

OUR STRENGTHS

NED University possesses valuable strengths that contribute to realizing its vision of becoming a catalyst for social and economic transformation in the Country. These robust areas have the potential to overcome any weaknesses if aligned with our commitment and stakeholder dedication. The noteworthy areas deserving mention are as follows:



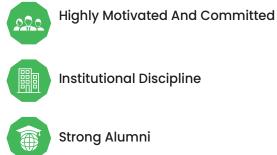
One Hundred Years Plus Legacy Of Learning And Innovation



Cutting-edge Research Infra-structure



Quality Of Our Student Body



STRATEGIC PILLARS

By effectively harnessing its strengths, the University prioritizes the following areas to drive the strategy:



Pillar 01 - Academic Excellence

Actions needed:

- 1. Enhance Program Diversity and Relevance:
- Launch new cutting-edge programs annually.
- Regularly update courses to reflect industry standards and advancements.
- 2. Improve Stakeholder Satisfaction and Engagement:
- Conduct surveys to gauge and increase student, alumni, and employer satisfaction.
- Forge collaborations with international institutions and industries to enrich academic and research opportunities.

3. Strengthen Research Culture and Quality:

- Maintain a balanced ratio of postgraduate to undergraduate enrollment.
- Ensure a balanced ratio of thesis-based to coursework-based master's programs.
- Increase the conversion rate of postgraduate theses to high-quality publications.
- Foster a diverse academic community by increasing international student enrollment and promoting a higher ratio of external to internal PhD students.

- New programmes launched Number of Course Updates Student Satisfaction
- Alumni Satisfaction Employer satisfaction Rate of Admissions
- New active collaborations with International institutions New active collaborations with Industries
- Ratio of postgraduate to undergraduate enrolment
- Ratio of Thesis based to Coursework based Masters (to monitor research intensity)
- Ratio of Postgraduate thesis to JCR (Q1/Q2) publications conversion rate (to monitor quality of research)
 New programmes offered in hybrid/online mode
- Number of International Students enrolled
 Ratio of international to national PhD students
- Ratio of external to internal PhD students (higher is better)



Pillar 02 - Faculty Development

Actions needed:

1. Enhance Faculty Qualifications and Expertise:	3. Promote Research Excellence and Funding:
 Increase the ratio of faculty with PhDs through targeted hiring and incentivized professional development programs. Encourage international exposure by promoting terminal degrees from abroad, aiming for a reasonable increase annually. Support faculty in obtaining international professional teaching certifications to diversify teaching methodologies and approaches. 	 Increase the ratio of faculty with active externally funded research projects through targeted support and collaboration initiatives. Increase the total amount of externally funded research by faculty members annually by a reasonable margin. Enhance average research funding per faculty member through grant-writing workshops and mentorship programs.
 2. Foster a Supportive and Engaged Faculty Community: Conduct regular surveys to assess and improve faculty satisfaction, with a goal of achieving a first quartile satisfaction rate annually. 	 4. Strengthen Research Output and Innovation Encourage and support faculty to publish in JCR indexed (Q1/Q2) category journals, aiming for a gradual increase in publications annually. Promote patent applications and approvals, aiming for a continual increase in approved patents annually.

5. Develop Effective PhD Supervision:

Increase the ratio of approved supervisors for PhD supervision to overall PhD faculty to ensure
effective mentorship and guidance for doctoral candidates.

- Ratio of PhD to Non-PhD Faculty Ratio of Faculty with the terminal degree from abroad
- Ratio of faculty members with international professional teaching certifications
- Faculty satisfaction Ratings Ratio of Faculty members with active externally funded research projects
- Total Amount of externally funded research by faculty members
- Average Research Funding per faculty member
- Total papers published in JCR indexed (Q1/Q2) category journals
- Average JCR indexed (Q1/Q2) category publications per faculty member Total Approved Patents
- Average Approved Patents per faculty member
- Ratio of approved supervisors for PhD supervision to overall PhD faculty

Pillar 03 - Students Success

Actions needed:

- 1. Improve Student Retention and Graduation Rates:
- Implement targeted support programs to enhance student retention, aiming for a decent retention rate at the start of the second semester.
- Develop strategies to ensure timely graduation, aiming for an appropriate graduation rate of within the designated time frame.
- 2. Enhance Graduate Engagement and Employment Opportunities:
- Establish career development initiatives to increase graduate engagement and employment rates within six months of graduation, targeting a continual improvement based on previous years baseline.

3. Foster Entrepreneurial Spirit and Innovation:

- Promote entrepreneurship among students by offering incubation support and networking opportunities, aiming to increase the number of entrepreneurial alumni from the last four batches annually.
- Encourage participation in national and international innovation competitions to showcase student talent and foster innovation culture, aiming for an increase in the number of awards won by students annually.

- Student retention rate at the start of 2nd semester
- Graduation rate within time
- Graduate Engagement/Employment Rate in 6 months of graduation
- Number of entrepreneurial alumni last 4 batches
- Awards won by students in national/international innovation competitions



Pillar 04- Infrastructure and Facilities

Actions needed:

- 1. Enhance Infrastructure Development and Upgrades:
- Develop new facilities to accommodate growing needs and enhance the learning environment, targeting new facilities annually.
- Upgrade laboratories and computer centers to ensure they meet modern standards and technological requirements, with facilities upgraded annually on continual basis.

3. Modernize Learning Spaces:

 Equip classrooms with modern tools and technologies to facilitate interactive and engaging learning experiences, aiming for continued increase in the fully equipped facilities by the end of strategy cycle.

2. Ensure Accessibility and Safety Standards:

- Improve accessibility for disabled persons in campus buildings, aiming for full compliance with accessibility standards.
- Ensure all buildings meet health, safety, and environmental (HSE) compliance regulations, with ongoing assessments and necessary upgrades as required.

4. Enhance Digital Resources and Online Learning:

 Improve digital resources and online learning platforms to meet the evolving needs of students, with a target of achieving a satisfaction rating of at first quartile annually through regular feedback and updates.

- Number of new facilities developed
- Laboratories upgrades
- Computer Centres upgrades
- Accessibility of disabled persons in campus and buildings
- HSE compliant buildings
- Classrooms equipped with modern tools and technologies
- Student satisfaction rating with digital resources and online learning platforms.



Pillar 05 - Professional Development

Actions needed:

- 1. Expand Professional Development Opportunities:
- Increase the number of trainings arranged by NED Academy and departments annually, aiming for a reasonable growth each year.
- Offer a diverse range of trainings, including senior executive level programs, to cater to varying professional development needs.

2. Enhance Participation and Reach:

- Increase the number of participants attending trainings at NED Academy and departments through targeted marketing and outreach efforts.
- Offer online and blended trainings to accommodate diverse learning preferences and expand accessibility, aiming for a gradual increase of proportion of all trainings to be delivered in this format.

3. Foster International Engagement:

 Increase the ratio of international to national participations in trainings to promote cross-cultural learning and collaboration.

- Number of trainings arranged by NED Academy
- Number of trainings arranged by centres and departments
- Number of participants attended trainings at NED Academy
- Number of participants attended trainings at centres and departments
- Number of senior executive level trainings
- Number of online/blended trainings
- Ratio of International to National participations



Pillar 06 - Industry Collaboration

Actions needed:

- 1. Foster Strategic Industry Partnerships and Engagement:
- Strengthen and diversify industry partnerships to enhance student opportunities and research collaborations.
- Facilitate faculty engagement in placement programs and cooperative education initiatives to bridge academia-industry gaps.
- 2. Enhance Graduate Placement and Employability:
- Promote cooperative education programs with industries to offer practical work experience.
- Implement strategies to improve graduate placement rates through enhanced industry connections and career development support..

Key Performance Indicators:

- Number of industry partnerships
- Number of faculty members engaged in faculty placement programmes
- Number of industries engaged in Cooperative Education Programme
- Placement rate of graduates

Pillar 07 - Internationalization

Actions needed:

- 1. Foster Global Engagement and Collaboration:
- Expand and cultivate international partnerships and agreements to broaden global connections and opportunities for research, student exchanges, and collaborative projects.
- Organize international conferences, seminars, webinars, and lectures to facilitate knowledge exchange and cross-cultural learning experiences..

2. Promote International Mobility and Exchange:

- Encourage faculty participation in international mobility programs to foster academic collaboration and professional development opportunities.
- Facilitate student involvement in international exchange programs to promote cultural understanding, academic enrichment, and global citizenship.

- Number of international partnerships and agreements
- Number of International Conferences / Seminars / Webinars and Lectures
- Percentage of faculty involved in international mobility
- Percentage of students involved in international exchange programmes

Pillar 08 - Alumni Engagement

Actions needed:

- Increase the frequency and diversity of university activities involving alumni engagement, including networking events, mentorship programs, and reunions, to strengthen connections between alumni and the university community.
- Implement regular surveys and feedback mechanisms to assess alumni satisfaction with their engagement experiences.
- Utilize feedback to tailor engagement activities and initiatives, ensuring they meet the needs and expectations of alumni, ultimately enhancing their satisfaction and fostering long-term relationships with the university.

Key Performance Indicators:

- Number of University activities with Alumni engagement.
- Alumni satisfaction related to their engagement experiences

Pillar 09 - Service to Community

Actions needed:

1. Enhance Community Outreach and Engagement:

- Increase the number of beneficiaries from University community service programs by expanding outreach efforts and diversifying initiatives to address a wider range of community needs.
- Cultivate partnerships with active international Technical/Professional bodies on campus to facilitate knowledge exchange, collaborative projects, and professional development opportunities for students and faculty.

2. Foster Holistic Development and Social Responsibility:

- Organize a variety of co- and extra-curricular events to provide students with diverse opportunities for personal growth, skill development, and networking.
- Increase the number of University activities with philanthropic engagement to instill a culture of social responsibility among students, faculty, and alumni, contributing positively to charitable causes and community welfare.

- Number of beneficiaries from University community service programme
- Number of active international Technical/Professional bodies on campus
- Number of co- and extra-curricular events held
- Number of University activities with Philanthropic engagement

Pillar 10 - Research and Innovation

Actions needed:

- 1. Stimulate Research Funding and Collaboration:
- Increase the amount of research funding through targeted grant applications, partnerships with funding agencies, and industry collaborations.
- Develop new partnerships specific to research to foster interdisciplinary collaborations, knowledge exchange, and access to resources and expertise.

2. Foster Research Excellence and Innovation:

- Facilitate the successful commercialization of research projects through technology transfer, entrepreneurship support, and industry partnerships.
- Enhance the quality of research outputs by promoting publications in high-impact Q1/Q2 Journals, maintaining a favorable ratio of such publications to overall research outputs.

Key Performance Indicators:

- Amount of Research funding
- Number of new partnerships developed specific to research
- Successfully commercialized projects
- Ratio of Q1/Q2 Journals published to overall publications

Pillar 11 - Digitalization

Actions needed:

- 1. Expand Digital Offerings and Reach:
- Increase the ratio of programs offered in digital/hybrid mode to provide flexible learning options and expand access to education.
- Expand the reach of digital offerings by increasing the number of participants and engaging with a diverse range of countries to promote global access to education.

2. Optimize Digital Revenue Streams and Sustainability:

- Maximize revenue generated via digital offerings by implementing innovative pricing strategies, enhancing course offerings, and targeting key markets.
- Develop sustainable digital business models to ensure long-term viability and growth in the digital education sector.

- Ratio of programs offered in digital/hybrid mode
- Number of participants
- Proportion of revenue generated via digital offerings
- Number of countries engaged

Pillar 12 - Sustainability

Actions needed:

- 1. Enhance Resource Efficiency and Financial Sustainability:
- Optimize faculty to staff and faculty to student ratios to ensure efficient resource utilization while maintaining high-quality education standards.
- Increase self-generated income through innovative revenue streams, such as partnerships, research grants, and entrepreneurship initiatives, to reduce dependency on external funding sources and enhance financial sustainability.
- 2. Promote Environmental Conservation and Renewable Energy Adoption:
- Implement initiatives to shift electricity consumption to solar energy, reducing the institution's carbon footprint and promoting renewable energy adoption.
- Increase the volume of endowment and pension funds dedicated to sustainability-focused investments, supporting initiatives aligned with environmental conservation and social responsibility.

3. Support Access to Education and Social Development:

- Expand scholarship programs for students to increase access to education for underprivileged and deserving individuals, fostering inclusivity and social development.
- Map institutional activities to Sustainable Development Goals (SDGs) to align efforts with global sustainability targets and enhance accountability and impact measurement.

- Faculty to Staff Ratio
- Faculty to Student Ratio
- Self-generated income
- Student fee against the total cost per student
- Electricity shifted to solar energy
- Volume of Endowment Fund
- Volume of Pension Fund
- Volume of scholarships for students
- Number of students availing scholarships
- SDG mapping
- Percentage of Waste processed/recycled
- Percentage of Wastewater treated for recycling
- Percentage of CO2 footprint mitigated through interventions
- New plantations (internal as well as external)

STRATEGY | 29 20

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