

NED University of Engineering and Technology



Sustainability Report 2022-23

PREFACE

This is the fifth Sustainability Report published by NED University of Engineering and Technology, for the year 2022-23 with the aim to report progress on the commitment and contributions of the University towards sustainable development agenda. NED University has explored to enhance its impact on sustainability in many and various ways including campus infrastructure and setting, institutional policies and strategies, curriculum, and community engagement. The report outlines key achievements, summarizes performance and provides detailed evidence and data, with reference to published documentation where appropriate. The report also highlights the diverse sustainability initiatives in progress across the campus and looks ahead to those planned for 2022 onwards.

The Honorable Vice Chancellor of the NED University has taken the lead in transforming the Main Campus of the University into a 'live lab' working towards a sustainable and ultimately first carbon neutral engineering university campus of Pakistan. He himself chairs a variety of University forums to address challenges and monitor the progress of all the activities related to sustainability. The NED University has taken up the responsibility in leading the Higher Education Institutions of Pakistan in becoming the sustainable campus sites and host academic and research activities for the local and international industries and municipalities working towards the establishment of a sustainable future for us all.

TABLE OF CONTENTS

UNIVERSITY MANAGEMENT	4
SUSTAINABILITY LEADERSHIP	5
1 University Vision Statement	6
2 University Mission Statement	6
3 Quality Policy of the University	6
4 University Rankings	7
4.1 Times World Impact Ranking	7
4.2 QS Asian Ranking	7
4.3 RUR World Ranking	8
4.4 HEC National Research, Innovation and Commercialization Rankin	8
5 Academic Programmes	9
6 Carbon Neutral Built Environment Initiative of the University	9
7 University Impact	11
7.1 Undergraduate Courses	11
7.2 Post Graduate Courses	12
7.3 Undergraduate Projects (Final Year Design Projects)	12
7.4 Postgraduate Projects / Thesis	13
7.5 Externally Funded Research Projects	13
7.6 University Events	14
7.7 Research Publications	14
7.8 SDG-wise Mapping	15
8 Carbon Neural and Other On-Campus Sustainable Initiatives	18
8.1 University Carbon Mitigation Targets	18
8.2 Solarization of Buildings (Renewable Energy)	19
8.3 Energy Efficient Appliances	19
8.4 CO ₂ Emissions Calculation	20
8.5 Sewerage Disposal and Inorganic Waste Treatment	20
8.6 Plantation Drive	21
8.7 Urban Forests Plantations	21
8.8 Water Filtering Units	23
8.9 Waste Water Recycling	23
8.10 Healthy Friday	24
8.11 U-Inspire Pakistan	24
8.12 Pedestrian Path Policy on Campus	25
8.13 Green Construction and Renovation	25
8.14 Reducing the Use of Paper and Plastic in Campus	26
8.15 Publish Sustainability Reports	26

NED University of Engineering and Technology
Sustainability Report 2022-23

9	Health and Well-Being Facilities	27
9.1	Medical Department	27
9.2	Sports Facilities	28
9.3	Extra and Co-Curricular Activities	31
10	Community Service Programme	34
11	Water Consumption Details	36
12	Electricity Consumption Details	37
13	Summary of Consumed and Sustained Commodities	38
14	Gender Equality	39
14.1	Students	39
14.2	Faculty and Staff	40
15	Ethnic and Religious Equality	42
15.1	Students	42
15.2	Faculty and Staff	43
16	Research Statistics	45
17	Research Centres	45
17.1	Advanced Traffic Lab for Analytics And Simulation (ATLAS)	45
17.2	Centre for Affordable Housing And Sustainable Built Environment	45
17.3	Electronics Design Centre (EDC)	45
17.4	National Centre for Data Analytics and Cloud Computing (NCBC)	46
17.5	National Centre for Cyber Security (NCCS)	46
17.6	National Centre for Artificial Intelligence (NCAI)	46
17.7	National Centre for Robotics and Automations (NCRA)	47
17.8	Centre for Advanced Studies In Renewable Energy (ASURE)	47
17.9	National Incubation Centre	47
17.10	K Electric Lab	47
17.11	Norwegian Centre of Petroleum Studies	48
17.12	Centre for Software Research and Development (CSRD)	48
17.13	Advanced Material Testing Facility	48
17.14	Instrumentation Centre (IC)	49
17.15	DICE Energy Innovation Centre	49
17.16	Panjwani Hisaar Water Institute	49
17.17	High Performance Computing Centre (HPCC)	49
17.18	Cowasjee Earthquake Study Centre	50
17.19	NED Virtual Reality Centre (VR Centre)	50
17.20	Building Information Modeling Centre (BIM)	50
17.21	Product Development Centre	51
17.22	Heritage Cell	51
17.23	Water Modeling Centre (WMC)	51
17.24	NED University Fire Lab	51
17.25	Centre for Quantum Technologies	51

UNIVERSITY MANAGEMENT

- **Dr. Sarosh Hashmat Lodi**, *Vice Chancellor*
- **Prof. Dr. Muhammad Tufail**, *Pro Vice Chancellor*
- **Prof. Dr. Asad-ur-Rehman Khan**, *Dean Civil and Petroleum Engineering (CPL)*
- **Prof. Dr. Syed Amir Iqbal**, *Dean Mechanical and Manufacturing Engineering (MME), Dean Chemical and Process Engineering (CPE - Additional Charge)*
- **Prof. Dr. Saad Ahmed Qazi**, *Dean Electrical and Computer Engineering (ECE)*
- **Prof. Dr. Noman Ahmed**, *Dean Architecture and Sciences (ASC)*
- **Mr. Syed Ghazanfar Hussain**, *Registrar*

SUSTAINABILITY LEADERSHIP

- **Dr. Sarosh Hashmat Lodi**, *Vice Chancellor*
- **Prof. Dr. Muhammad Tufail**, *Pro Vice Chancellor*
- **Prof. Dr. Saad Ahmed Qazi**, *Dean Electrical and Computer Engineering (ECE), and Sustainability Director*
- **Prof. Dr. Noman Ahmed**, *Dean Architecture and Management Sciences (AMS), and Dean Information Sciences and Humanities (ISH - Additional Charge)*
- **Engr. Syed Wasiuddin**, *Director Works and Services*
- **Dr. Ali Hasan Mahmood**, *Controller Student Affairs*
- **Engr. Muhammad Saqib**, *Assistant Professor, Department of Civil Engineering, Sustainability Coordinator and Faculty Advisor NED Green Society*
- **Dr. Muhammad Ali Memon**, *Associate Professor, Department of Electrical Engineering*
- **Dr. Atif Mustafa**, *Chairman, Department of Environmental Engineering*
- **Dr. Junaid Akhlas**, *Assistant Professor, Department of Polymer and Petrochemical Engineering*
- **Engr. Madiha Zaidi**, *Assistant Professor, Department of Urban and Infrastructure Engineering*
- **Engr. Muhammad Hassan ul Haq**, *Assistant Professor, Department of Electrical Engineering*
- **Ar. Sadia Bano**, *Assistant Professor, Department of Architecture and Planning*
- **Engr. Adeel Ahmed Khan**, *Assistant Professor, Department of Mechanical Engineering*
- **Engr. Muhammad Ali Akhtar**, *Lecturer, Department of Computer and Information Systems Engineering*

1. University Vision Statement

Be a leader in enabling Pakistan's social and economic transformation.

2. University Mission Statement

Acquire education and research excellence in engineering and allied disciplines to produce leadership and enabling application of knowledge and skills for the benefit of the society with integrity and wisdom.

3. Quality Policy of the University

NED University of Engineering and Technology believes in establishing environment conducive to continual improvement its efforts for providing the highest-level quality education.

The University is making all out efforts to raise its standards through teaching excellence and quality research. These efforts are carried out with involvement of the entire university work force – to obtain utmost possible satisfaction of its customer.

Our endeavors are to make our students useful to the society in particular and to humanity in general. In dealings with industry and utilities, attempts are made to maintain standards of integrity as well as quality.



4. University Rankings

The University ranked among the top 800 universities in the World Impact Rankings, and secured top 300 ranking for industry, innovation, and infrastructure.

4.1 Times World Impact Ranking



4.2 QS Asian Ranking



4.3 RUR World Ranking



4.4 HEC National Research, Innovation and Commercialization Ranking



5. Academic Programmes

NED University has 30 teaching departments from six faculties and one constituent college - TIEST, offering 35 undergraduate, 55 masters and 24 Ph.D. programmes – thus a total of 114 programmes are currently being offered. NED University has decided to transform all undergraduate engineering programmes on outcome-based education (OBE). All undergraduate engineering programmes have already obtained OBE-based accreditation from Pakistan Engineering Council (PEC).

The details of faculty wide departments and the programmes offered can be found at https://www.neduet.edu.pk/faculties_and_departments.

6. Carbon Neutral Built Environment Initiative of the University

NED University is the oldest institution and one of the leading engineering universities of Pakistan. On February 12, 2018, the worthy Vice Chancellor of NED University Dr. Sarosh H. Lodi has signed the Talloires Declaration to become Carbon Neutral Campus and brought Pakistan as a member of Talloires Signatory List. As an institution of higher education, concerned about the state of the world environment and the advancement of sustainable development, NED University shall strive to promote actions that will achieve a sustainable future. By signing the Talloires Declaration, a university agrees to Increase Awareness of Environmentally Sustainable Development, Create an Institutional Culture of Sustainability, Educate for Environmentally Responsible Citizenship, Foster Environmental Literacy for All, Practice Institutional Ecology, Involve all Stakeholders, Collaborate for Interdisciplinary Approaches, Enhance Capacity of Primary and Secondary Schools, Broaden Service and Outreach Nationally and Internationally, and Maintain the Movement.

More than ever, our world is facing the challenges of climate change and sustainability. The future of our existence is at stake. NED University has taken this initiative to bring together professionals in academia and research, practicing and consulting engineers/ architects, construction and energy industry professionals, public and private sector managers, builders, policy makers, assessors, certification and funding bodies and government officials concerned with climate change and sustainability projects and centre programmes from all over the world, for engagement and exchange of thoughts and experiences regarding the concepts of climate change, sustainability and carbon neutrality.

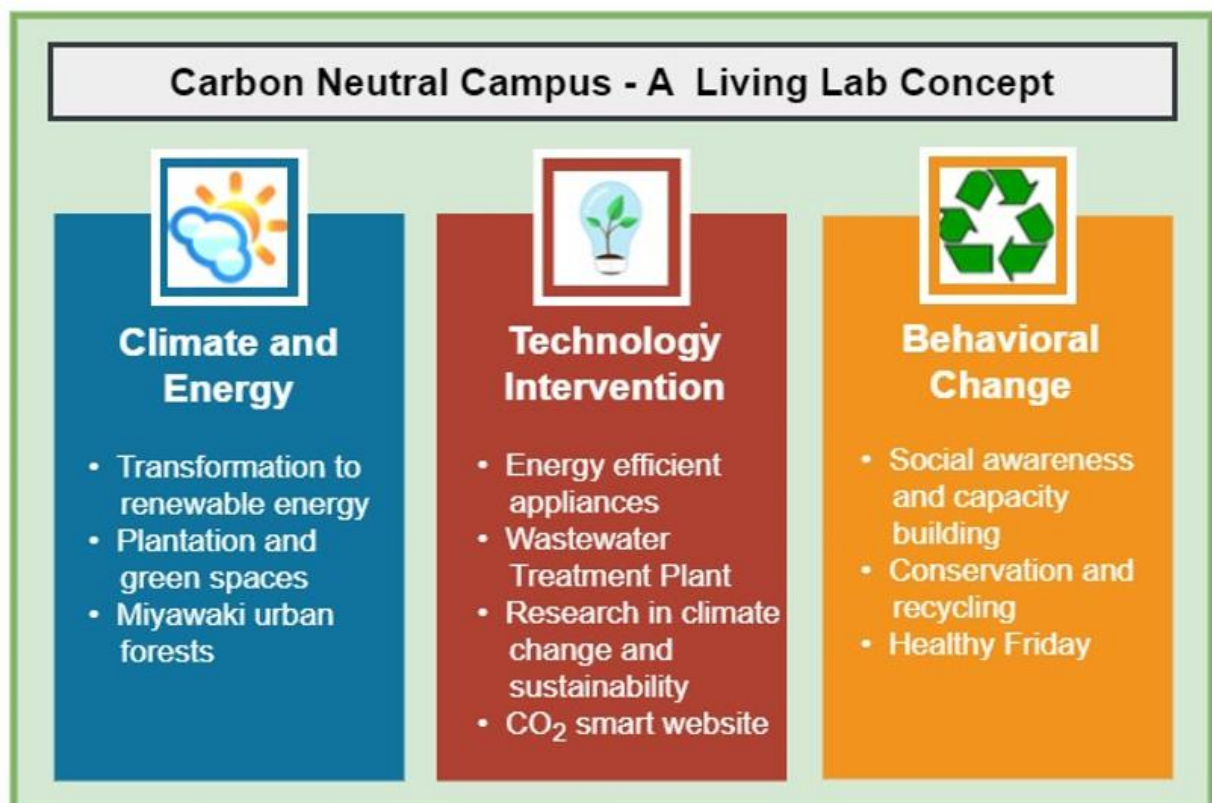
The term carbon neutrality generally refers to achieving a net zero carbon emission. The task of achieving carbon neutrality requires taking two parallel lines of actions.

- i. Reducing Carbon Emission: In order to reduce carbon emission on campus the measures that need to be taken include creating general awareness, conducting carbon emission

studies, improving energy efficiency to reduce carbon emission related to energy generation, making the campus green and using renewable energy sources.

- ii. Balancing Carbon Emission: In order to balance carbon emission on campus the measures that need to be taken include tree plantation, optimization of water use, optimization of land use and turning the campus into forested campus.

Under a Carbon Neutral Built Environment initiative, launched in 2018, a steering committee was formed under the leadership of Vice-Chancellor NED University to drive the initiative's multi-pronged agenda. The idea was to create a set of diverse experiences related to climate change best practices within and beyond the University campus, with a goal to gradually transform the University as a "LIVE LAB" of carbon neutrality – based on the concept of "SEEING IS BELIEVING".



7. University Impact

NED University has demonstrated a strong commitment to promoting sustainable development through its academic and research activities. By mapping seven key components, NED University has identified areas where it can contribute to achieving the United Nations Sustainable Development Goals (SDGs). Through these efforts, NED University is making a significant impact towards creating a more sustainable future and promoting global progress towards achieving the SDGs. The seven components mapped on SDGs include:

- Undergraduate courses
- Postgraduate courses
- Undergraduate projects (Final year design projects)
- Postgraduate projects / thesis
- Externally funded research projects
- University events
- Research Publications

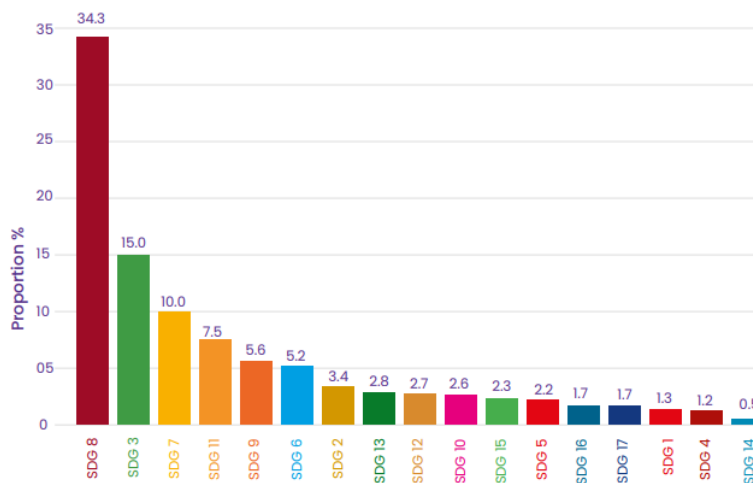


7.1 Undergraduate Courses

During year 2022-23, 804 courses at undergraduate level were offered. There were 1,447 mapping instances on SDGs. The following table shows the numerical mapping while the proportions are visualized below:

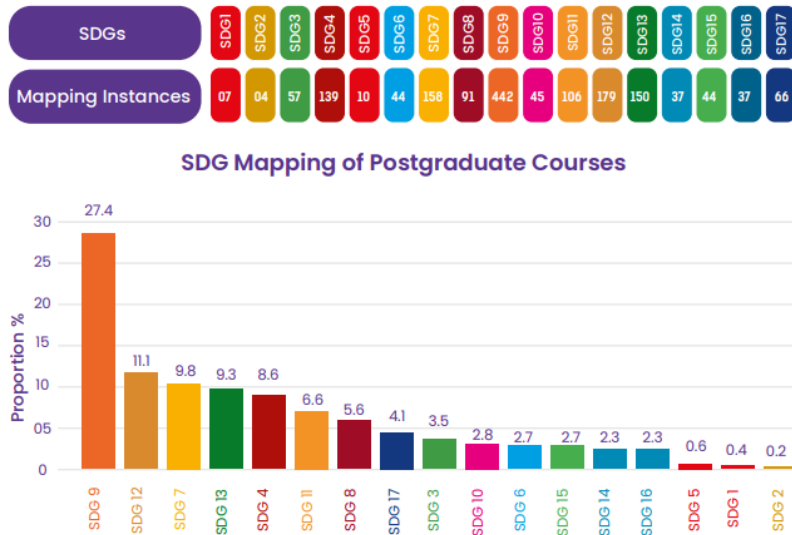


SDG Mapping of Undergraduate Courses



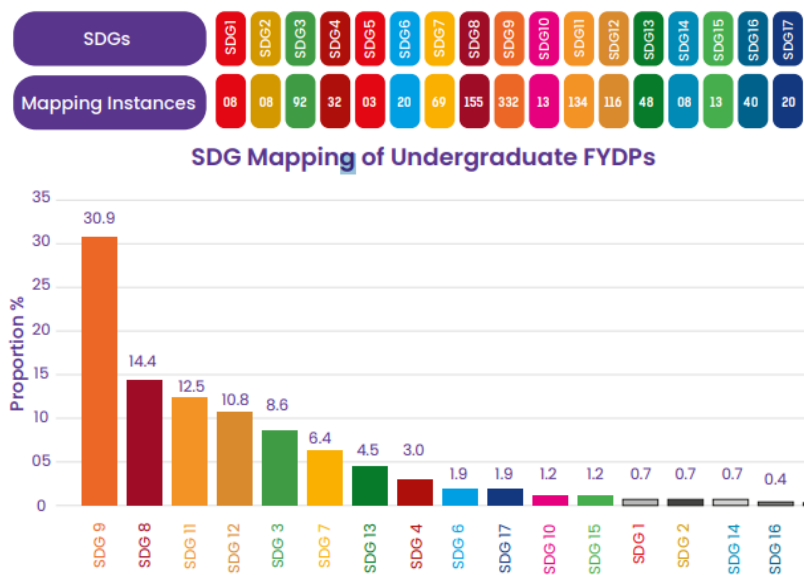
7.2 Postgraduate Courses

During year 2022-23, 507 postgraduate courses were taught at the master level. There were 1,616 mapping instances on SDGs. The following table shows the numerical mapping while the proportions are visualized below:



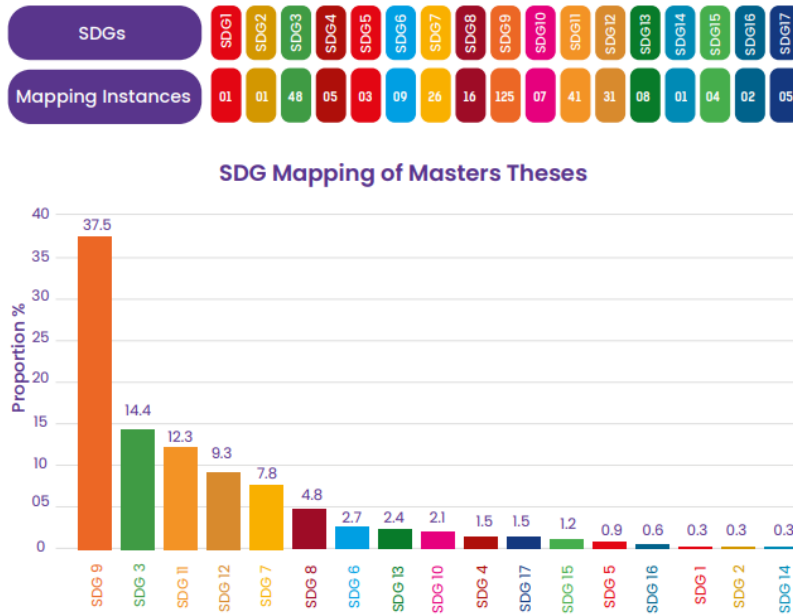
7.3 Undergraduate Projects (Final Year Design Projects)

543 Final year design projects (FYDPs) were carried out at undergraduate level during year 2022-23. There were 1,075 mapping instances on SDGs. The following table shows the numerical mapping while the proportions are visualized below:



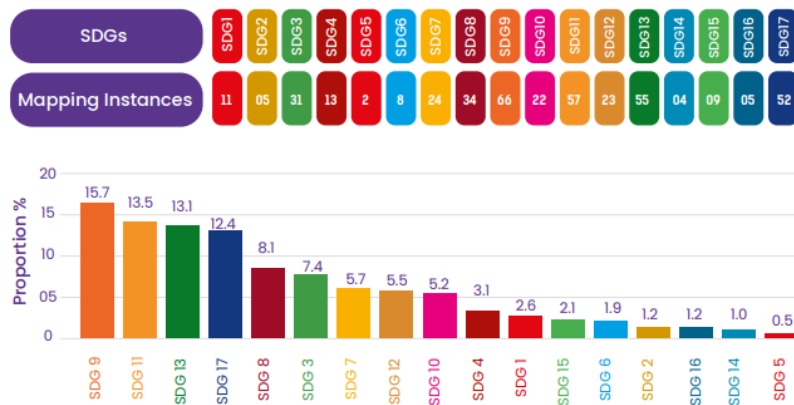
7.4 Postgraduate Projects / Thesis

136 postgraduate projects / theses were undertaken during the year 2021-22. There were 333 mapping instances on SDGs. The following table shows the numerical mapping while the proportions are visualized below:



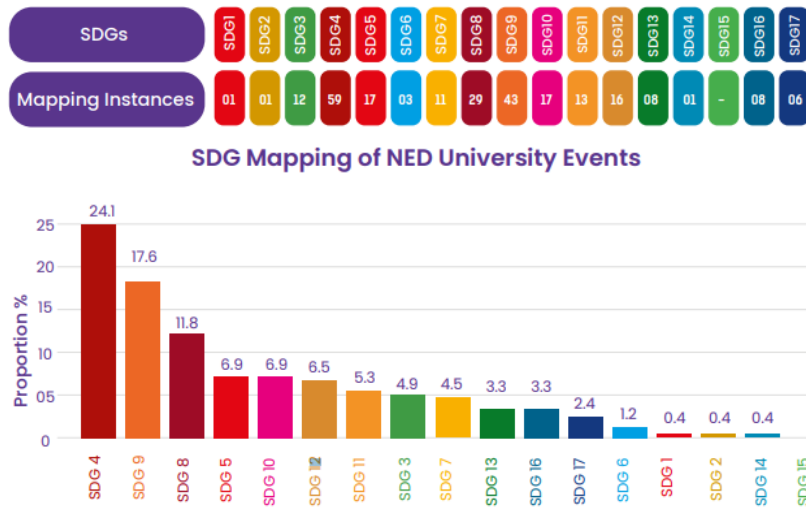
7.5 Externally Funded Research Projects

During year 2022-23, 98 externally funded projects were being actively pursued by faculty members. There were 421 mapping instances of these projects on SDGs. The following table shows the numerical mapping while the proportions are visualized below:



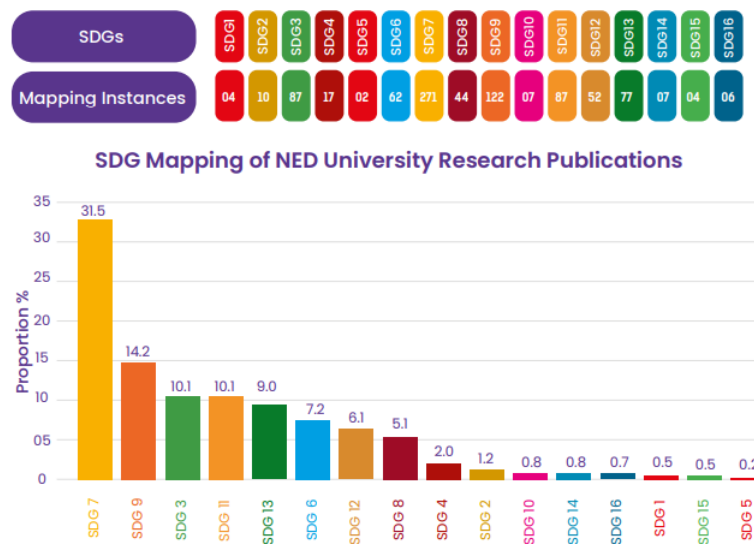
7.6 University Events

During year 2022-23, 113 activities including international conferences, seminars, workshops and other co- and extra-curricular activities were held across NED University campuses. These activities had 245 SDG mapping instances. The following table shows the numerical mapping while the proportions are visualized below:



7.7 Research Publications

Mapping of NED University research publications across 1-16 sustainable development goals (SDGs) as per data provided by Scopus over the last five years is presented here. There were 859 publications mapping onto SDGs with 6,839 citations. The following table shows the numerical mapping while the proportions are visualized below:

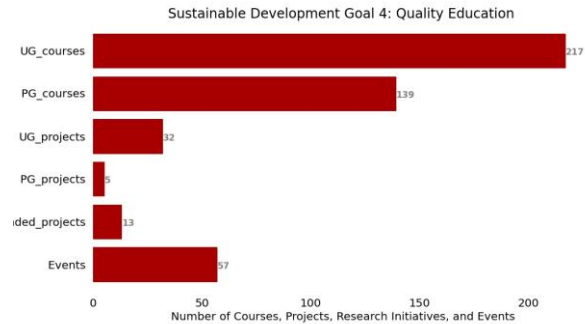
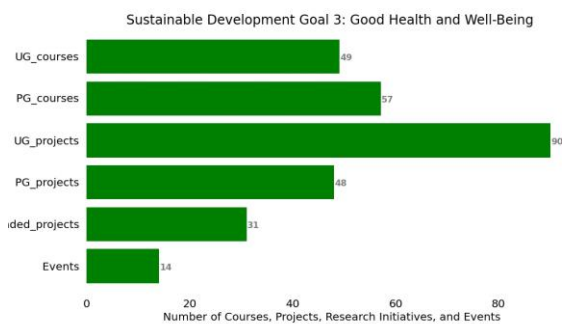
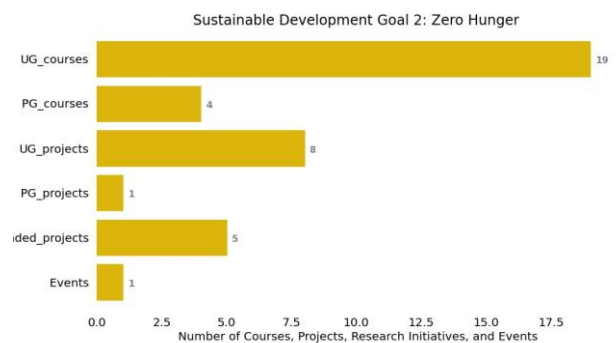
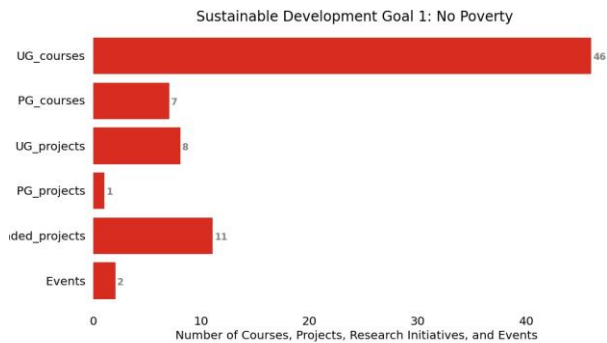
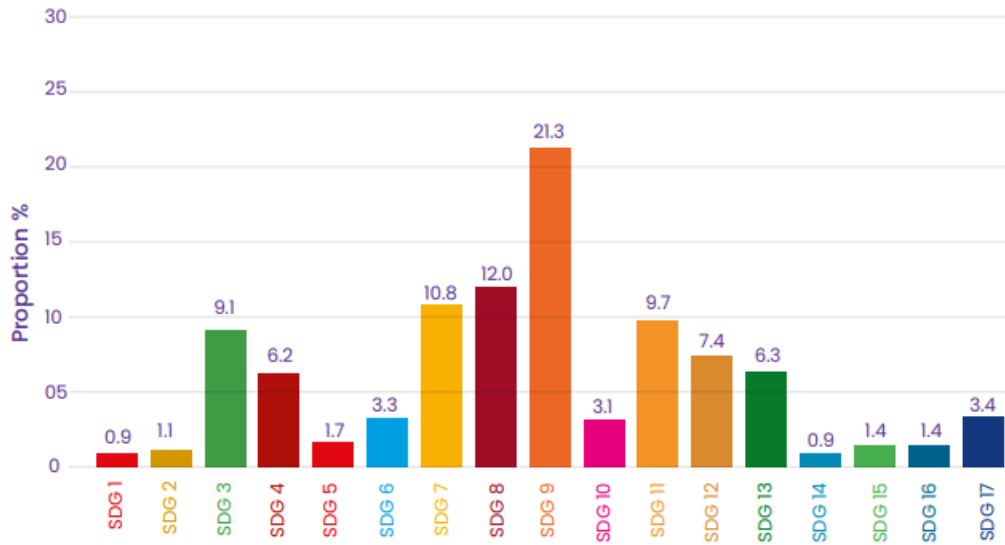


NED University of Engineering and Technology
Sustainability Report 2022-23

7.8 SDG-Wise Mapping

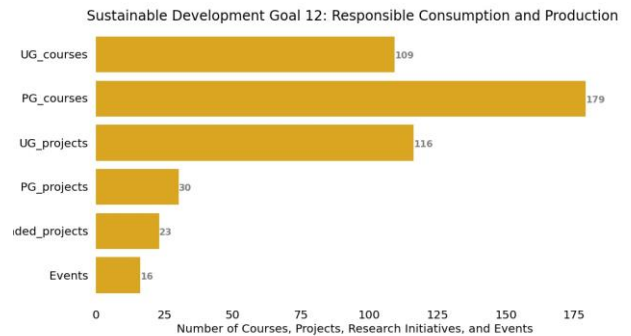
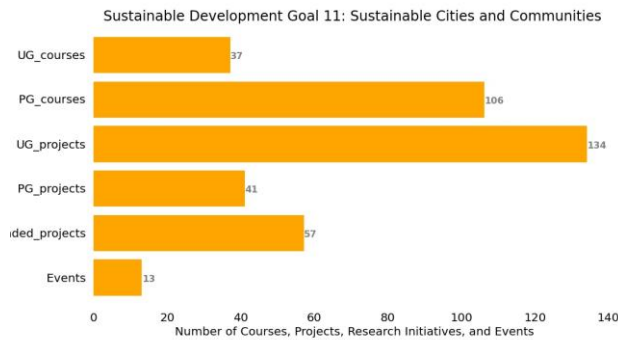
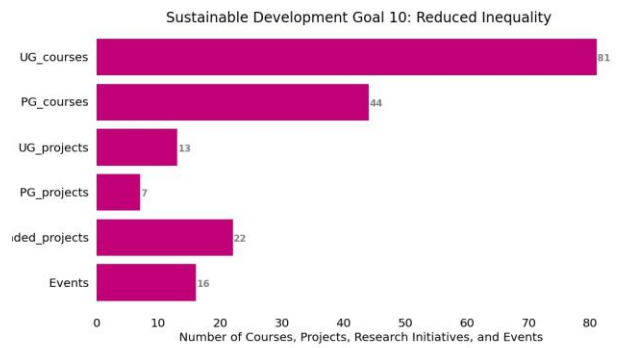
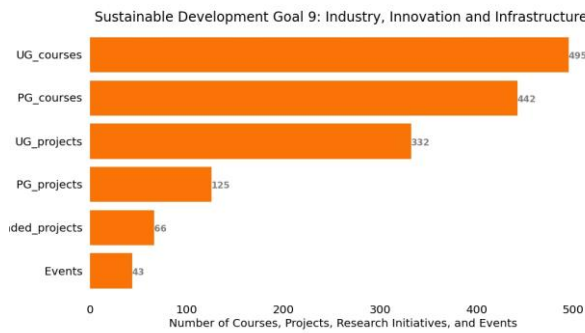
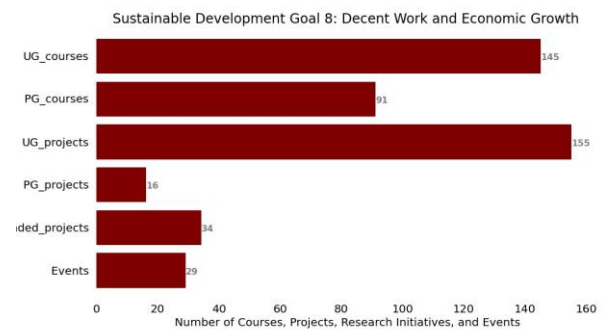
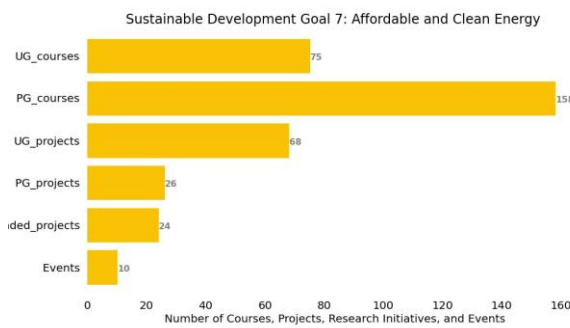
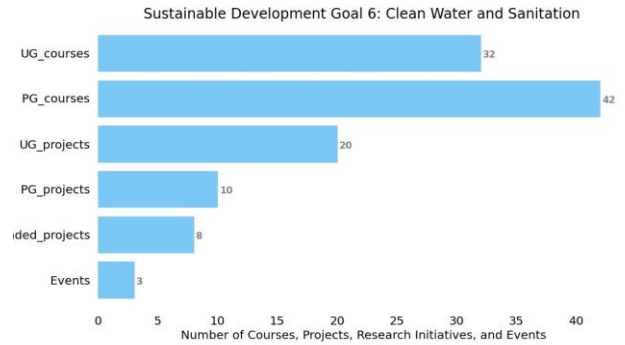
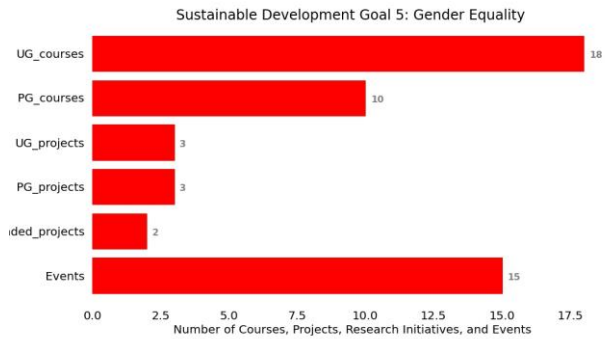
SDG-wise graphical summaries depicting contributions in these key components is as follow. The details of the same is available at <https://impact.neduet.edu.pk/>.

Overall SDG Mapping of impact components
NED University



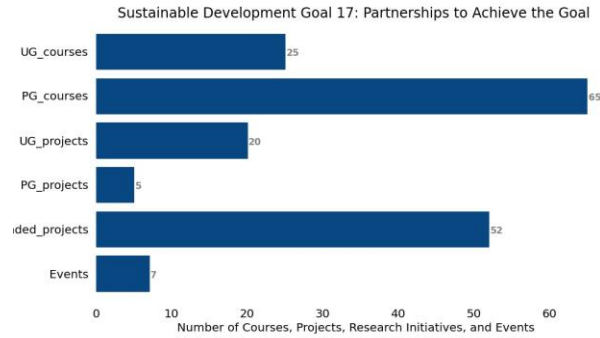
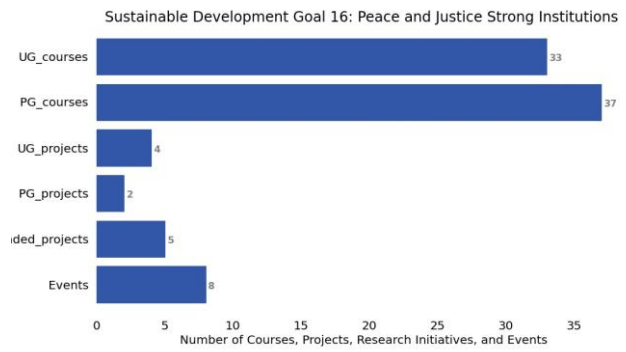
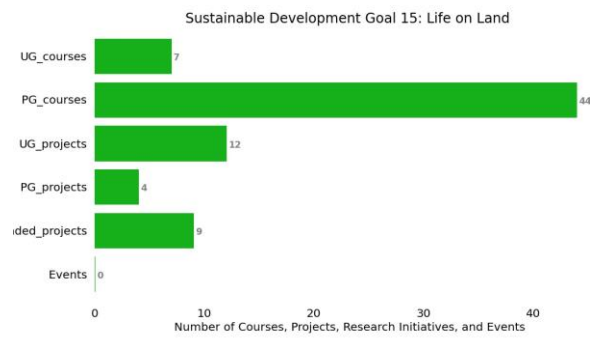
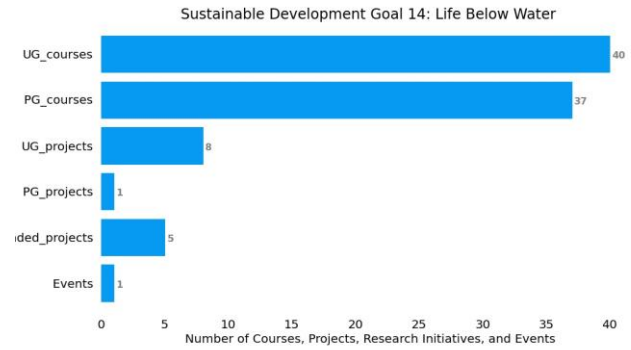
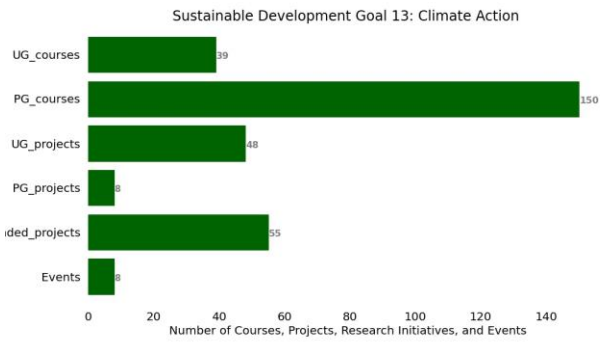
NED University of Engineering and Technology

Sustainability Report 2022-23



NED University of Engineering and Technology

Sustainability Report 2022-23



8. Carbon Neutral and Other Sustainable On-Campus Initiatives

8.1 University Carbon Mitigation Targets

The Campus Carbon Calculator (CCC) was originally developed by the former non-profit Clean Air - Cool Planet and the Sustainability Institute at University of New Hampshire (UNH), USA. NED University of Engineering and University uses this utility to gauge total scope 1, scope 2 and scope 3 carbon footprints annually.

The carbon mitigation targets for the University are as follows. As can be seen from the table, for the year 2030 the forecasted net carbon emissions for Scope 1 and 2 are zero. The University is continuously striving to achieve this goal.

Sources	Carbons Emissions MT eCO ₂				
	2017	2021	2024	2027	2030
	Measures	Forecasted			
Scope 1					
Diesel for power generation (Gallons)	(1500) 13	(900) 8	(600) 5	(200) 2	(0) 0
Natural gas (MMBtu)	(22,000) 1100	(17,500) 875	(13,000) 650	(9000) 450	(6500) 325
Diesel for University buses (Gallons)	(21,000) 300	(17,500) 250	(12,000) 171	(8000) 114	(5000) 71
Refrigerants (lbs)	(250) 200	(250) 200	(250) 200	(250) 200	(250) 200
Organic fertilizers (lbs)	(6250) 1	(6250) 1	(6250) 1	(6250) 1	(6250) 1
Scope 2					
Purchased electricity	(3665) 1500	(2800) 1149	(2500) 1026	(2200) 903	(1800) 657
Scope 3					
Student and staff commute (km)	(14.8) 18,100	(12) 14,676	(10) 12,230	(8) 9784	(5) 6115
Solid waste (tons)	(10) 13	(10.5) 13	(11) 14	(12) 14	(12.5) 15
Paper (tons)	(100) 270	(65) 176	(60) 162	(55) 149	(50) 135
Total carbon emissions (MT eCO₂)					
Scope 1 and 2	3114	2483	2054	1670	1255
Scope 1, 2 and 3	21,497	17,347	14,459	11,617	7520
Mitigation measures					
Plantation (number)	(6500)	(8700)	(1850)	(26,00)	(57,000)
(in and outside campus)	~143	~191	~407	~572	~1255
Net carbon emissions (MT eCO₂)					
Scope 1 and 2	2971	2292	1647	1098	0
Scope 1, 2 and 3	21,497	17,347	14,459	11,617	7520

8.2 Solarization of Buildings (Renewable Energy)

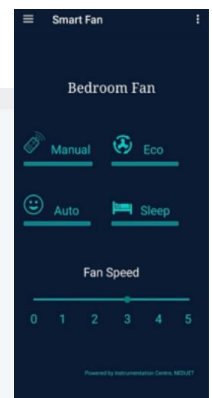
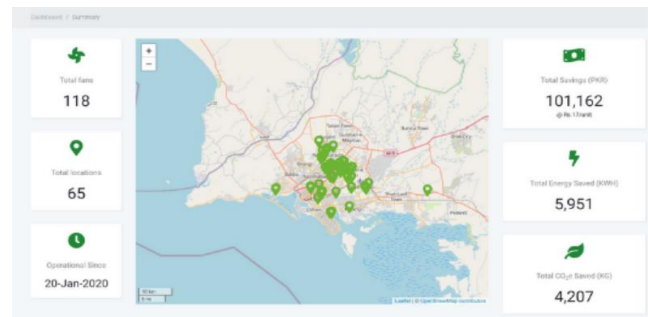
Currently the departments which are using solar sources include Department of Civil Engineering, Department of Electrical Engineering, Department of Mechanical Engineering, Department of Textile Engineering, and Engr. Abul Kalam Library.

So far 421 KW of solar power plants have been installed generating 583,927 units annually, making about 17.5% of scope 2 CO₂ footprint.



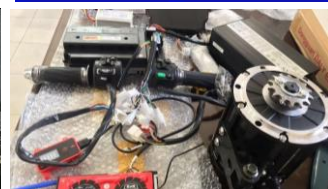
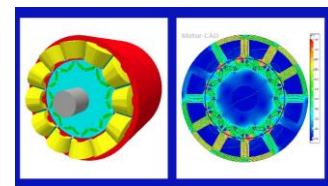
8.3 Energy Efficient Appliances

Energy efficient appliances usage are replacing conventional appliances. 100% of the computer monitors used at the NEDUET campuses are energy efficient LCD monitors. The lighting equipment is gradually being switched to LED bulbs while the ceiling fans are being modified to consume less electrical energy through their conversion to DC source. Smart energy efficient fans have been introduced, which use 50% less energy.



Some other related projects include:

- Li-ion Battery fabrication
- Design of Charging Stations
- High Efficiency Motor Design
- Vehicle Controllers
- Intelligent Battery Management System



8.4 CO₂ Smart Executive Club

The University has started a project to record and report carbon footprint of the region. The project aims towards collaborative efforts to reduce this carbon footprint. The related data is available at <https://co2smart.neduet.edu.pk/>. The website continuously reports current status of carbon reduction contribution in kg.



8.5 Sewerage Disposal and Inorganic Waste Treatment

Major portion of the wastewater generated at the NED University main campus is aerobically treated at the wastewater treatment facility onsite and is then used for watering plants and vegetation.



Wastewater aerobic treatment and use for plant watering

The inorganic waste generated at the University is sorted and sorted in the junkyard and is periodically disposed-off via recycling and/or down-cycling.



Inorganic waste sorting

8.6 Plantation Drives

NED University has 9200+ Trees at Main Campus during the year 2022-23.



Plantation in Collaboration with Master Peace Karachi



Plantation in Collaboration with Telenor

8.7 Urban Forest Plantations

First Urban Forest in the University was inaugurated on July 12, 2019. Since then 17 Urban Forests (13 on campus, 4 off-campus) have been planted in different areas of Karachi, providing 1,620 trees. About 12.5 tonnes of CO₂ emissions have been sequestered in the last two years. As the trees grow, the impact increases. One fully grown Urban Forest of 300 sq. ft. saves about two tonnes of CO₂ annually.



NED University of Engineering and Technology
Sustainability Report 2022-23

The details of these forests are as under. For more information visit

<https://co2smart.neduet.edu.pk/e-club/index-urban-forest.html>.

S. No.	Urban Forest Site	Sponsor	Dimension	No. of Plants	Inauguration Date
1	Department. of Materials Engineering, NEDUET	Engr. Sohail Bashir Chairman IEP, Karachi Centre	~ 28 m ²	90	12-07-2019
2	Gymnasium NEDUET (Right Side)	Pak Suzuki Motors	~ 28 m ²	90	15-11-2019
3	Gymnasium NEDUET (Left Side)	Bank Al Habib Limited	~ 28 m ²	90	19-02-2020
4	Department of Textile Engineering, NEDUET	Bank Al Habib Limited	~ 56 m ²	180	25-02-2020
5	NEDUET Visitors Gate	Col.(R) Zafar Uddin Ahmed CEO Sigma Motors	~ 28 m ²	90	01-03-2020
6	S.M.S. Agha Khan School	NEDUET Technical Sponsor	~ 48 m ²	154	02-11-2020
7	Department. of Materials Engineering II, NEDUET	Col.(R) Zafar Uddin Ahmed CEO Sigma Motors	~ 28 m ²	90	25-03-2021
8	Department. of Materials Engineering III, NEDUET	Col.(R) Zafar Uddin Ahmed CEO Sigma Motors	~ 28 m ²	90	25-03-2021
9	KMC Abdullah Haroom Road	F M Associates	~ 28 m ²	90	13-04-2021
10	KMC Shaheed Benazir Bhutto Park	Chotani Group	~ 28 m ²	90	06-11-2021
11	NED Masjid, NEDUET	HYE Family A NEDAN-NA Project	~ 28 m ²	90	01-04-2022
12	Abul Kalam Library, NEDUET	NEDA-DC A NEDAN-NA Project	~ 28 m ²	90	08-04-2022
13	Mech Corner, NEDUET	Nayyar Iqbal Ahmad A NEDAN-NA Project	~ 28 m ²	90	07-04-2022
14	City Campus, NEDUET	NED Alumni Association – North America	~ 28 m ²	90	08-06-2022
15	Mech Corner II, NEDUET	NED Alumni Association of Michigan	~ 28 m ²	90	23-11-2022
16	Cowasjee School, NEDUET	NED Alumni Association – North America	~ 28 m ²	90	23-11-2022
17	MAJU, Karachi	MAJU	~ 28 m ²	90	30-12-2021

8.8 Water Filtering Units

The two water filtering Units with the capacity of 10,000 gallons per day and 5,000 gallons per day respectively are continuously providing safe and filtered water to the students, employees and the residents of University Staff Colony.



8.9 Waste Water Recycling

As part of a living lab, NED has established a wastewater treatment facility on campus having capacity of 29,000 m³ annually; and gray water treatment facilities at Abul Kalam Library and NED mosque having 2,420 m³ annual processing capacity. Department of Civil Engineering is minimizing water use by installing pipe system for recycle greywater for watering the different gardens in the department.



Greywater Management at Department of Civil Engineering

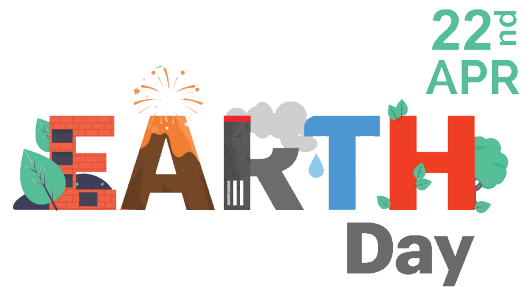
8.10 Healthy Friday

The University has taken the initiative to declare every Friday as Healthy Friday. It is a vehicle free day, when no vehicle / motorbikes are allowed in the Campus during the day. The employees and the students are encouraged to use bicycles. Prominent figures have joined NED University during healthy Fridays.



8.11 U-Inspire Pakistan

U-Inspire Pakistan is a society having vision to foster Pakistani youth and young professionals as the generator of innovation in Science, Engineering and Technology for disaster resilience at national and global level. The details are available at <https://uinspire.neduet.edu.pk/>.



T
F
n
d
e
j

8.12 Pedestrian Path Policy On Campus

As per the pedestrian path policy of the University, the following facilities are provided to the faculty, staff and students including the disabled.

- Railings and supports
- Street lamps for pedestrian in night
- Ramps and guiding blocks which have suitable design for pedestrian having physical disabilities



8.13 Green Construction and Renovation

Elements of green building implementation as reflected in all construction and renovation policy. Majority of the buildings at the NED University of Engineering and Technology are designed to take maximum advantage of sunlight and coastal winds. The classrooms are especially designed for efficient daylighting and with provision of large windows for cross-ventilation.



Natural Ventilation, Department of Industrial & Manufacturing Engineering



Natural Day-Lighting, Department of Polymer & Petrochemical Engineering

NED University of Engineering and Technology Sustainability Report 2022-23

8.14 Reducing the Use of Paper and Plastic in Campus

The University dedicatedly follows the guidelines on the judicious use of paper both by the staff members and the students. The Green Society of the NEDUET actively promotes the minimal use of paper and plastic products at the campus and in daily lives among the students and the staff members of the University.

8.15 Publish Sustainability Reports

The University is regularly publishing sustainability reports since 2018, with aim to report progress on the commitment and contributions of the University towards sustainable development agenda.

These reports are available at https://www.neduet.edu.pk/sustainability_reports.



9. Health and Well-Being Facilities

9.1 Medical Department

Medical Department is located next to Humanities Department of this University and is administered by Principal Medical Officer, accompanied by two Senior Medical Officers and One Lady Medical Officer, all are posted at main Campus. One male and two female nurses are also present in Main Campus. Medical Sub Centre is located at each LEJ, City Campus and Thar Campus, dispenser is available at LEJ while Female Nurse at City Campus.

There are numerous diagnostic and therapeutic modalities available free of charge for the students and staff at the Main Campus. Emergency/routine Outpatient Department Service (OPD), Pathological, Radiological and Electrocardiographic facilities are also available. Similarly therapeutic support in the form of Airway, Breathing and Circulatory (ABC) assistance are available. Besides that Outpatient facilities are also available at peripheral Medical Sub-Centres, i.e. City and LEJ Campus. However, X-Ray, Pathological Laboratory and Ambulance facility are restricted to Main Campus only. Further details are available at https://www.neduet.edu.pk/medical_department.



NED University of Engineering and Technology
Sustainability Report 2022-23

NED University's Medical Department is committed to ensuring the wellbeing of the University's workforce and students. Here are some highlights of the medical services provided during 2022-23:

- The Medical Department has provided COVID-19 vaccination services to students/employees and their dependents, with a total of 5,884 individuals vaccinated.
- 792 students were treated in both emergency and out-patient at the peripheral medical sub-centres at LEJ and City campuses.
- 2,046 employees and their dependents received treatment in emergency and out-patient at the peripheral sub-centres at LEJ and City campuses.
- 908 employees and their dependents received inpatient treatment at both direct panel/enlisted reimbursement hospitals.
- The medical department offers various diagnostic Pathological/Radiological tests and provides counselling for cognitive assessment, psychological wellbeing, and stress management on a case-by-case basis.
- The Medical Department also organizes health awareness sessions from time to time.

9.2 Sports Facilities

Sports Section was established at NED University in 1978 that is functioning under the control of Students Affairs Department. The facilities provided by this section include boy's gymnasium, girl's gymnasium, squash complex, two outdoor basketball courts, one tennis court, cricket ground with turf wicket, football ground, fitness centre, table tennis, volley ball, and badminton.

The Sports Section also organizes NED Interdepartmental Games and Inter Faculty Games every year for the Student of NED University, while, NED University teams participate in Intervarsity Championships that are scheduled under auspices of Higher Education Commission, Islamabad i.e. (Badminton, Basketball, Cricket, Table Tennis, Football, Volleyball, Squash etc.).



NED University of Engineering and Technology
Sustainability Report 2022-23

The following sports events were organized by the Sports Section of the Office of Controller of Student Affairs during the year 2022-23:

Dates	Sports Event	Venue
27 th June to 5 th July 2022	NED BIG BASH All Karachi Intervarsity Cricket (Boys) tournament 2022.	NED Cricket ground
21 st July to 23 rd July 2022	Sports Gala (Access Intensive Session) by Department of Humanities with collaboration of DSA/Sports.	NED Cricket ground
16 th September 2022	Organized Night Cricket matches by Paigham-e-Pakistan Secretariat (Sports Gala) 2022.	NED Cricket ground
7 th and 9 th November 2022	All Pakistan Intervarsity Swimming (Men) Championship 2022-23	Iqra University, Karachi.
15 th to 18 th November 2022	All Pakistan Athletics (Women) Championship 202-23	Lahore College for Women University, Lahore.
18 th November 2022	International Cricket tournament (Peace Tolerance Inclusivity in Society) 2022.	NED Cricket ground.
25 th to 27 th November 2022	50 th National Women Athletics Championship 2022.	Punjab Stadium, Lahore
22 nd and 23 rd November 2022.	All Pakistan Inter-varsity Shooting (Men) Championship 2022-23.	Pakistan Navy PNS Bahadur Karsaz, Karachi
28 th to 30 th November 2022	Intervarsity Badminton (Boys) Zone-M Championship 2022-23.	Institute of Business Management (IoBM), Karachi.
3 rd and 4 th December 2022.	All Pakistan Intervarsity Shooting (Women) Championship 2022.	Pakistan Navy PNS Bahadur Karsaz, Karachi
18 th to 27 th December 2022	Training Camp for 9 th National Air Gun Shooting Championship 2022-23.	Pakistan Navy PNS Bahadur Karsaz, Karachi.
18 th to 27 th December 2022	9 th National Air Gun Shooting Championship 2022-23	Pakistan Navy PNS Bahadur Karsaz, Karachi
27 th & 28 th December 2022.	Intervarsity Volleyball (Boys) Zone-M. Championship 2023 Organized by Sir Syed University, Karachi.	NED Boys Gymnasium

NED University of Engineering and Technology
Sustainability Report 2022-23

2 nd to 5 th January 2023.	Inter-varsity Basketball (Men) Zone-M Championship 2022-23	Institute of Business Management (IoBM), Karachi.
9 th to 11 th January 2023.	Organized Sports Gala with Collaboration NSA Students Society.	NED Boys Gymnasium Football Ground Basketball Outdoor Court Tennis Court
11 th to 13 th January 2023	Organized Sports Gala with Collaboration Chemical Engg. Department.	NED Boys Gymnasium Football Ground Basketball Outdoor Court Tennis Court
26 th to 28 th January 2023.	All Pakistan Intervarsity Football Women Championship 2022-23 with the collaboration HEC	NED Football ground
26 th to 31 st January 2023	All Pakistan Intervarsity Volleyball (Women) Champonship-2022-23 Organized Institute of Business Administration (IBA) Sukkur.	NED Boys Gymnasium
27 th to 30 th January 2023	All Pakistan Intervarsity Chess (Men) Championship 2023	Dow University Health & Sciences, Karachi
27 th to 30 th January 2023	All Pakistan Intervarsity Archery (Men) Championship 2022.	Iqra University, Karachi
25 th February 2023 to 2 nd March 2023	Intervarsity Cricket (Boys) Zone-G Championship 2022-23	Dow University Health & Sciences Karachi
28 th February to 1 st March 2023	Prime Minister Talent Hunt Volleyball (Men & Women) trials	NED Sports Complex
3 rd and 4 th March 2023	Prime Minister Talent Hunt Volleyball (Men & Women) trials	Mehran University, Jamshoro
6 th and 7 th March 2023	Prime Minister Talent Hunt Volleyball (Men & Women) trials	Quaid-e-Awam University, Benazirabad
8 th and 9 th March 2023	Prime Minister Talent Hunt Volleyball (Men & Women) trials.	Institute of Business Administration (IBA), Sukkur
10 th and 11 th March 2023	Prime Minister Talent Hunt Volleyball (Men & Women) trials	Quaid-e-Awam University, Larkana

NED University of Engineering and Technology
Sustainability Report 2022-23

1 st to 10 th May 2023	30 th National Rifle Shooting (Men) Championship 2023.	Jehlum, Punjab
11 th to 20 th May 2023	34 th National Games: Shooting Men Championship 2023	Jehlum, Punjab
12 th to 17 th June 2023	Prime Minister Youth Programme Talent Hunt Sports League Volleyball (Men & Women)	NED Boys Gymnasium

9.3 Extra and Co-Curricular Activities

The Office of the Controller of Student Affairs in collaboration with student and professional societies organizes several extra and co-curricular activities throughout the year. Following is the list of few of such activities from year 2022-23:

- The Blood Donation Drive was held on 7th July 2022 at NED University. The drive was conducted in collaboration with the National Institute of Blood Disease (NIBD) and the Medical Department, NED.
- The event Mega Project Exhibition & Robotics Competition (MPERC'22) was held on 21 - 22 July 2022 at Syed Mahmood Alam Auditorium and Fountain Area by NED SENTEC Society.
- The programme Youm-e-Hussain (RA) was held on 4th August 2022 at Syed Mahmood Alam Auditorium. The programme was organized by Youm-e-Hussain Committee.
- The Orientation & Carnival Programme 2022-23 was held on 14th October 2022 at NED Auditorium and the carnival was setup outside the auditorium at Fountain Area.
- The Habib Girls School students visited NED University on 19th October 2022, in which 70 students along with eight teachers visited various Departments of NED University.
- A Lecture on Peace, Tolerance and Inclusivity in Society was delivered by Mr. Raja Zia ul Huq on 28th October 2022 at Syed Mehmood Alam Auditorium. The programme was a collaborative effort of the NEDians Forum Society and Peace Society.
- The programme on Women Empowerment was held on 31st October 2022. The programme was organized by Notifying Stories Around (NSA) Society.
- The Green Society arranged an Awareness Session regarding Waste Management and Energy Conversation for the students of NED Cowasjee School on 1st November 2022.
- A training session on Peace, Tolerance and Inclusivity in Society was held on 3rd November 2022. The training was conducted by Prof. Dr. Farooq Hasan and was organized by Peace Society.
- The NED Book Fair was held on 7 - 8th November 2022 at Fountain Area of NED University in collaboration with Neurocomputation Lab, NED in which all societies of the Department of Students Affairs participated. The event was organized by Engr. Abul Kalam Library.
- The programme on Impact of social media on Youth was held on 17th November 2022 at Civil Engineering Video Conferencing Hall. The programme was organized by University Advancement & Financial Assistance (UAFA) office.

NED University of Engineering and Technology
Sustainability Report 2022-23

- The NED International Cricket Tournament - Peace Tolerance and Inclusivity in Society was held on 18th November 2022 at NED Cricket Ground. The match was collaborative effort of NED Sports Section and Peace Society.
- The Blood Donation Camp was setup by Fatimid Foundation in collaboration with NED Medical Department on 22 - 23 November 2022 at NED University Main Campus.
- The theatre play “Rise the Curtain 2.0” was held on 29th November 2022 at Syed Mehmood Alam Auditorium the event was organized by Notifying Stories Around Society.
- An awareness program against the Harassment of Women at Workplace - Act 2010 was held on 1st December 2022 at Audio Visual Hall of Department of Mechanical Engineering. The session was held in collaboration with Federal Ombudsman (Wafaqi Mohtasib) Secretariat, Government of Pakistan.
- The programme Tech-Talk Technology Workshop was held on 1st December 2022 at AV Hall of Petroleum Engineering and was organized by the Society for the Promotion of Science, Engineering and Technology (SNETEC).
- The Anti-Corruption Week was marked between 2 - 12 December 2022 at NED Premises and was organized in collaboration with Higher Education Commission (HEC) & National Accountability Bureau (NAB). The events were organized by the Peace Society.
- The programme Outreach Session for PhD Scholarship Program was held on 8th December 2022 at Civil Engineering Video Conferencing Hall in collaboration with Higher Education Commission (HEC).
- The programme The Qalandars (Meet & Greet) was held on 16th December 2022 at Syed Mehmood Alam Auditorium of NED University in collaboration with Lahore Qalandars Team.
- The programme Outreach USA - Life after Graduation was held on 19th December 2022 at Audio Visual Hall of Mechanical Engineering and was organized by The NEDians Forum Society.
- The programme Anti-Corruption Walk was held on 20th December 2022 and was organized by Higher Education Commission (HEC) & National Accountability Bureau (NAB) in collaboration with the Peace Society.
- The Seminar on Solid Waste Management was held on 29th December 2022 at Civil Engineering Video Conferencing Hall and was organized by Green Youth Movement in collaboration with NED Green Society.
- The programme Beyond the Horizon 2.0 Speaker Session & Theatre was held on 2nd January 2023 at Syed Mehmood Alam Auditorium. The programme was organized by The NEDian Forum (TNF).
- The programme Zaawiya was held on 3rd January 2023 at Civil Engineering Video Conferencing Hall and was organized by NED Literary & Publications Society (NLPS).
- The programme NED Debate Cup was held on 4th January 2023 at Syed Mehmood Alam Auditorium. The programme was organized by NED Debating Society

NED University of Engineering and Technology
Sustainability Report 2022-23

- The programme TECH FEST 5.0 was held on 5th January 2023 at Syed Mehmood Alam Auditorium, and was organized by Society for the Promotion of Science, Engineering and Technology (SENTEC)
- A sports event “Olympiad” was held on 9 - 11 January 2023 at NED Sports Complex and Syed Mehmood Alam Auditorium. The event was organized by Notifying Stories Around Society (NSA).
- A Blood Donation Drive was held on 18th January 2023 at NED University in collaboration with the Indus Hospital Blood Centre.
- The programme on Reproductive Health with a Focus on Gender Equality Marital Rights and Planning a Healthy Family was held on 18th January 2023 at NIC Auditorium.
- The Federal Minister Prof. Ahsan Iqbal visited NED University on 10th February 2023. He visited several labs and inaugurated projects at NED before speaking at Syed Mehmood Alam Auditorium.
- The D-Raju Institute (Girls) students visited NED University on 20th February 2023 in which 400 students along with 10 Teachers visited various Departments of NED University.
- A motivational session by Dr. Farhat Hashmi was held on 20th February 2023 at Syed Mehmood Alam Auditorium.
- A meeting was arranged for Afghan Students for Documentary Contest on 24th February 2023 at Civil Engineering Video Conferencing Hall. The Zoom Meeting was arranged by Department of Students Affairs in collaboration with Higher Education Commission.
- The “D-Raju Institute (Boys) students visited NED University” on 1st March 2023 in which 200 students along with 8 Teachers visited various Departments of NED University.
- The Feroze Textile Staff Members visited NED University on 10th March 2023 in which 40 Staff Members visited various Departments of NED University. The visit was arranged in collaboration with Feroze Textile.
- The programme on Fulbright MS & PhD Scholarship was held on 14th March 2023 at NIC Training Room. The programme was organized by The NEDians Form Society (TNF) in collaboration with United States Educational Foundation of Pakistan.
- The event Pakistan Country Climate and Development (CCDR) was held on 14th March 2023 at Civil Engineering Video Conferencing Hall. The event was organized by Panjwani Hisar Water Institute (PHWI), Department of Student Affairs and the Department of Civil Engineering.
- The Training Session on How to Drive Safely was held on 15th March 2023 at NIC Training Room. The training session was organized in collaboration with Pak Suzuki Motor Co.
- The awareness programme on Turn Birds Hobby into Business was held on 17th March 2023 at Syed Mehmood Alam Auditorium. The programme was organized by Department of Students Affairs.
- The programme Inter-University Bilingual Declamation Competition 2023 was held on 21st March 2023 at Syed Mehmood Alam Auditorium. The programme was organized in collaboration with Higher Education Commission

NED University of Engineering and Technology
Sustainability Report 2022-23

- The session on Reuse of Plastic Bottle for Plantation was held on 22nd March 2023 at Civil Engineering Video Conferencing Hall. The session was organized by Green Youth Movement in collaboration with NED Green Society
- A Motivational Session on Ramzan, Roza, Quran and us by Mr. Shujja Uddin Sheikh was held on 5th April 2023 at Civil Engineering Video Conferencing Hall.
- Slabex event held on July 22, 2022, for engineering students to design, construct, and test translucent concrete slab.
- Site visit to Bahria Town on January 14, 2023, for students to experience environmental engineering.
- ACI NED organized Consaviour competition on March 17, 2023, to promote sustainable benefits of concrete.

10. Community Service Programme

NED University has been one of the pioneer universities among higher educational institutes of Pakistan which has introduced community service course as mandatory in all undergraduates' programmes since 2017. The basic philosophy is to inculcate following spirit among the students:

- To create a sense of social service, owing and contribution to communities around them
- To creating bonding with the communities being served
- To create enhanced social awareness and responsibility
- To develop civic and social responsibility
- Help to develop interpersonal, teamwork and leadership skills in students.

University's community service programme covers both on and off campus activities. Some of them are highlighted below:

On-Campus Services

- Sorting of Books at Circulation Library
- Plantation at Campus
- Paper Recycling
- Organizing Laboratories
- Maintenance activities at Mosque

Off Campus Services

- Plantation at Public Sector Schools
- Maintenance at Public Sector Schools
- Spending Time with Children at Orphanages
- Spending Time with Senior Citizens at Old Homes
- Spending Time with Special Children
- Iftar Drives
- Medical Camp
- Refreshment Drives
- Heat Stroke Prevention Drives
- Eid ul Adha Cleanliness Drive
- Beach Cleanliness Drive
- Lab demonstration at Public Sector Schools

NED University of Engineering and Technology
Sustainability Report 2022-23

Some of the Collaborating Organizations for Community Service Programme are as follow.



NED University of Engineering and Technology
Sustainability Report 2022-23

11. Water Consumption Details

Water consumption details within the University for the year 2022-23 are as follow.

S. No.	Month	Water Connection Size (Diameter) in Inches	Water Quantity in Gallons	Sub-total Water Quantity in Gallons
1	July	3	2,529,648	5,404,608
		8	2,874,960	
2	August	3	2,529,648	5,022,468
		8	2,492,820	
3	September	3	2,529,648	4,584,888
		8	2,055,240	
4	October	3	2,529,648	4,903,668
		8	2,374,020	
5	November	3	2,529,648	5,444,208
		8	2,914,560	
6	December	3	2,529,648	5,497,668
		8	2,968,020	
7	January	3	2,529,648	5,654,088
		8	3,124,440	
8	February	3	2,529,648	5,436,288
		8	2,906,640	
9	March	3	2,529,648	5,281,848
		8	2,752,200	
10	April	3	2,529,648	4,672,008
		8	2,142,360	
11	May	3	2,529,648	5,588,748
		8	3,059,100	
12	June	3	2,529,648	6,032,268
		8	3,502,620	
Total Water Quantity in Gallons				63,522,756
Total Water Quantity in Gallons				240,459 m ³

NED University of Engineering and Technology
Sustainability Report 2022-23

12. Electricity Consumption Details

Electricity consumption detail within the University for the year 2022-23 are as follow.

Location	Units Consumed (kWh) (A1-R tariff)												Total
	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	
Staff Colony S/S	110,989	75,515	94,619	91,604	63,626	47,601	40,211	47,742	59,810	96,679	99,344	114,859	942,599
Mech. & Elect. Dept.S/S	44,621	18,218	40,108	33,863	30,184	21,498	18,838	18,977	25,570	26,350	31,383	43,859	353,470
Civil Engg. Dept. S/S	83,956	42,669	75,518	77,652	62,542	50,038	37,192	46,377	56,265	62,736	71,079	102,995	769,018
Student Hostel S/S	77,926	43,853	74,159	55,366	54,796	38,001	36,097	38,346	51,453	53,267	62,830	92,736	678,830
New Mech. Lab.	28,983	9,729	27,315	29,217	17,381	8,577	4,699	5,626	14,858	23,360	18,847	36,690	225,283
New Elect. Lab.	24,182	5,496	23,946	19,632	15,235	10,356	7,006	7,749	11,614	12,451	13,037	21,803	172,505
NED Pump	5,242	5,323	5,040	5,233	3,439	5,368	4,843	5,507	4,985	5,801	5,205	5,810	61,796
City Campus	11,629	4,427	8,487	6,691	9,021	7,230	5,287	5,227	6,775	7,011	7,843	10,850	90,477
LEJ Campus	16,825	6,952	7,000	10,076	8,123	6,246	4,181	5,056	5,449	8,916	5,803	12,328	96,955
NED School	1,007	339	2,118	1,356	1,513	910	538	753	1,261	1,498	734	-	12,026
Admission Centre	26,448	17,817	24,843	24,631	17,261	10,579	7,498	10,150	17,372	21,488	22,623	32,483	233,193
CS & IT	8,688	6,502	8,504	7,458	6,913	5,050	5,327	5,538	5,357	8,007	8,947	9,400	85,690
Petrochemical	21,663	9,134	24,439	20,934	16,590	13,142	10,550	12,494	14,535	19,036	18,897	29,708	211,122
Automotive	13,815	3,693	17,601	10,409	12,482	11,504	9,083	7,491	10,314	15,722	10,788	16,275	139,176
Staff Colony S/S	110,989	75,515	94,619	91,604	63,626	47,601	40,211	47,742	59,810	96,679	99,344	114,859	942,599
Mech. & Elect. Dept.S/S	44,621	18,218	40,108	33,863	30,184	21,498	18,838	18,977	25,570	26,350	31,383	43,859	353,470
Civil Engg. Dept. S/S	83,956	39,740	75,518	72,323	62,542	46,604	37,192	43,195	56,265	58,431	71,079	95,926	742,771
Total Units	715,539	383,140	643,942	591,909	475,458	351,803	287,590	326,948	427,262	543,781	579,168	784,439	6,110,979
Solar Units	46,510	24,904	41,856	41,433	38,036	31,662	28,758	37,598	53,407.79	67,972	75,291	101,977	589,410
Renewable Proportion	6.5%	6.5%	6.5%	7%	8%	9%	10%	11.5%	12.5%	12.5%	13%	13%	10%

13. Summary of Consumed and Sustained Commodities

The following are some statistics of the commodities consumed and sustained in the University during the year 2022-23.

Electricity		
1	Total number of units consumed in Main, LEJ, City Campus, Staff Colony and Hostel (kWH)	6,110,979
2	Total number of units generated by Solar Systems (kWH)	589,410
3	Renewable Proportion	10%
Water		
4	Total amount of water consumed at the Main Campus (Gallons)	63,522,756
5	Re-cycled water (Gallons)	39,625,807
Waste		
6	Total solid waste (Tons)	198
7	Solid Waste recycled (Tons)	155
MT eCO₂ Carbon Footprint (%)		
8	Scope 1	7.8
9	Scope 2	10.1
Shuttle Ride Commute		
10	Total number of Shuttle rides	4,722
11	Number of students per ride	72
12	Total number of commuting personals (students + staff)	328394
Plantation		
13	Total number of Urban Forest	17
14	Total number of trees in Urban Forests	1620
15	Approximate total number of trees and plants including Urban Forests	9,200+

14. Gender Equality

The University always strives to provide equal facilities to all genders. Some supporting statistics are given in the following.

14.1 Students

The following are the gender-wise student statistics for admissions, enrollment and graduation, for the year 2022-23.

		Male	Female	Total
Applications	Undergraduate Programmes	7,812	3,772 (33%)	115,84
	Masters Programmes	1,424	490 (26%)	1,914
	PhD Programmes	80	43 (35%)	123
	Total Applicants	9,316	4,305 (32%)	13,621
Admissions	Undergraduate Programmes	1,427	1,156 (45%)	2,583
	Masters Programmes	678	267 (28%)	945
	PhD Programmes	17	7 (29%)	24
	Total Applicants	2,122	1,430 (400%)	3,552
Enrollment	Undergraduate Programmes	5,703	4,085 (42%)	9,788
	Enrolment in TIEST	74	7 (9%)	81
	Masters Programmes	2,115	758 (26%)	2,873
	PhD Programmes	136	84 (38%)	220
	Total Applicants	8,028	4,934 (38%)	12,962
Graduation	Undergraduate Programmes	1,353	939 (41%)	2,292
	Masters Programmes	669	246 (27%)	915
	PhD Programmes	15	4 (21%)	19
	Total Applicants	2,037	1,189 (37%)	3,226

Scholarships and financial assistance is also provided equally to all genders. Statistics for the year 2022-23 are given below.

	Male	Female	Total	Amount (PKR)
Private Funded	519	501 (49%)	1020	74,963,054
Maa Jee Scholarship	39	66 (63%)	105	10,500,000
Ehsaas Programme	216	227 (51%)	443	63,093,900
HEC Scholarship	130	138 (52%)	268	26,800,000
Zakat and Ushr	57	43 (43%)	100	10,039,000
Sindh HEC	10	07 (41%)	17	3,910,000
Admission Support (Financial Assistance)	36	45 (56%)	81	3,177,000
Semester Support (Financial Support)	07	17 (71%)	24	534,000
Duty Society	421	161 (28%)	582	10,060,500

NED University of Engineering and Technology
Sustainability Report 2022-23

14.2 Faculty and Staff

The University provides equal teaching, research and administrative opportunities to everyone irrespective of the gender. Gender-wise employment statistics for teaching departments are given below. The administrative posts include Chairperson, Co-Chairperson, and Postgrad Coordinator.

Department Name	Teaching Staff (Number)				Non-teaching Staff (Number)		
	Total	Male	Female	Female holding Administrative Post	Total	Male	Female
Civil Engineering	49	33	16		49	43	6
Urban and Infrastructure Engineering	8	1	7		29	21	8
Petroleum Engineering	14	13	1		18	16	2
Earthquake Engineering	4	4	0		18	14	4
Mechanical Engineering	56	50	6		66	66	0
Textile Engineering	21	10	11		37	35	2
Industrial and Manufacturing Engineering	24	16	8		40	38	2
Automotive and Marine Engineering	8	7	1		29	27	2
Electrical Engineering	48	31	17		56	55	1
Computer and Information Systems Engineering	30	14	16		40	39	1
Electronic Engineering	27	12	15		35	34	1
Bio-Medical Engineering	19	11	8	1	30	28	2
Telecommunications Engineering	16	7	9		16	16	0
Software Engineering	16	7	11	2	0	0	0
Computer Science and Information Technology	9	8	6	1	0	0	0
Mathematics	32	19	13		7	7	0
Physics	14	10	4		10	10	0
Chemistry	14	3	11	1	11	9	2
English Linguistics and Allied Studies	14	2	12	1	8	7	1
Essential Studies	8	5	3		8	5	3
Chemical Engineering	19	16	3		21	17	4
Materials Engineering	11	10	1		25	25	0
Metallurgical Engineering	15	12	3		34	33	1
Polymer and Petrochemical Engineering	8	4	4	1	20	19	1
Food Engineering	10	6	4		11	10	1
Environmental Engineering	5	4	1		18	17	1
Architecture and Planning	25	5	20	1	27	25	2
Economics and Management Sciences	16	12	4		7	7	0
Civil Engineering [TIEST]	10	8	2	1	2	2	0
Computer Science and Technology [TIEST]	9	8	1		27	27	0
Total	566	348	218	9	699	652	47

NED University of Engineering and Technology
Sustainability Report 2022-23

Likewise, gender-wise employment statistics for administrative departments and research centres are given below. Administrative posts include Vice Chancellor, Pro-Vice Chancellor, Registrar, Deputy Registrar, Director, and Deputy Director.

Department Name	Total Employees	Male	Female	Female holding administrative Post
VC Secretriariat	11	11	0	
P.V.C Secretariat	7	7		
Dean Office (Faculty of Civil and Petroleum Engineering)	3	3	0	
Dean Office (Faculty of Mechanical and Manufacturing Engineering)	5	5	0	
Dean Office (Faculty of Electrical and Computer Engineering)	4	4	0	
Dean Office (Faculty of Information Sciences and Humanities)	4	4	0	
Dean Office (Faculty of Chemical & Process Engineering)	9	8	1	
Dean Office (Faculty of Architecture & Management Sciences)	1	1	0	
Registrar Office	223	216	7	
Finance	46	41	5	
Examination	53	48	5	
Services	234	222	12	
Information Technology (IT Department)	40	34	6	
University Advancement and Financial Assistance (UA & FA)	4	4	0	
Student Affairs	35	29	6	
Industrial Liaison	8	8	0	
Planning & Projects	21	21	0	
Advanced Studies Research Board (ASRB)	4	4	0	
Quality Management Cell (QMC) / Quality Enhancement Cell (QEC)	5	5	0	
Medical Department	25	21	4	
Audit Department	8	8	0	
Office of Research, Innovation and Commercialization (ORIC)	4	3	1	
Technology Innovation Support Centre	0	0	0	
Procurement Cell	17	17	0	
Planning and Development	13	13		
Engr. Abul Kalam Library	57	44	13	2
High Performance Computing Centre	2	2		
Instrumentation Centre	5	5		
MR ISO Office	12	12		
NED Academy	4	4		
Panjwani - Hissar Water Institute	1	1		
Project Directorate Mega IV	1	1		
Project Directorate Mega V	1	1		
Sultan Qaboos Oman I.T. Chair	4	3	1	
Total	871	810	61	2

NED University of Engineering and Technology
Sustainability Report 2022-23

Similarly, significant representation of females can be seen in the following position-wise employee statistics.

Position	Male	Female	Total
Professors	46	05	51
Associate Professors	40	21	61
Assistant Professors	150	76	226
Lecturers	112	116	228
Research Staff	81	48	129
PhD Faculty	181	65	246
PhD Enrolled Faculty	50	21	71
Total	348	218	566

A 'Daycare Centre' is facilitating the female university employees. The University has recently approved Rs. 5 million for construction of an additional block for the Centre; its stone laying Ceremony was held in December 2019 by Justice (Rtd.) Nasira Iqbal.

15. Ethnic and Religious Equality

15.1 Students

The University does not discriminate admissions on the basis of religion. All students who meet the merit criteria are eligible for admission, irrespective of caste, creed or religion. Religion-wise statistics of the students admitted in batches from 2019 till 2023 are as follows. The table also shows the number of foreign national students admitted in the University in the same batches.

Batch	Total Registrations	Non-Muslims	Foreign Nationals
2019	2348	38	10
2020	2248	20	5
2021	2299	19	17
2022	2442	21	18
2023	2122	19	55

Major number of seats are reserved for the local students of home-city Karachi, however sufficient proportion of seats is kept for other ethnicities as well. The details of the distribution of seats can be found in the University Undergraduate Prospectus available at https://www.neduet.edu.pk/sites/default/files/Admissions-2023/UGProspectus_2023.pdf.

NED University of Engineering and Technology
Sustainability Report 2022-23

15.2 Faculty and Staff

The University provides equal employment opportunities including teaching, research and administrative positions to everyone who is eligible for the post on merit. The religion-wise statistics for the faculty are as follows.

Department Name	Teaching Staff (Number)		Non-teaching Staff (Number)	
	Total	Non-Muslims	Total	Non-Muslims
Civil Engineering	47		49	1
Urban and Infrastructure Engineering	8		29	
Petroleum Engineering	14	1	18	
Earthquake Engineering	4	1	18	1
Mechanical Engineering	56		66	
Textile Engineering	21		37	
Industrial and Manufacturing Engineering	24		40	
Automotive and Marine Engineering	8		29	
Electrical Engineering	48	1	56	
Computer and Information Systems Engineering	30		40	
Electronic Engineering	27		35	2
Bio-Medical Engineering	19		30	1
Telecommunications Engineering	16		16	
Software Engineering	16		0	
Computer Science and Information Technology	9		0	
Mathematics	32		7	
Physics	14		10	
Chemistry	14		11	
English Linguistics and Allied Studies	14		8	
Essential Studies	8		8	
Chemical Engineering	19		21	
Materials Engineering	11		25	1
Metallurgical Engineering	15		34	
Polymer and Petrochemical Engineering	8		20	
Food Engineering	10		11	
Environmental Engineering	5		18	
Architecture and Planning	25	1	27	1
Economics and Management Sciences	16		7	
Civil Engineering [TIEST]	10		2	
Computer Science and Technology [TIEST]	9	4	27	3
Total	557	8	699	10

NED University of Engineering and Technology
Sustainability Report 2022-23

Likewise, the religion-wise statistics for the staff of administrative departments and research centres are as follows.

Department Name	Total Employees	Non-Muslims
VC Secretriati	11	
P.V.C Secretariat	7	
Dean Office (Faculty of Civil and Petroleum Engineering)	3	
Dean Office (Faculty of Mechanical and Manufacturing Engineering)	5	
Dean Office (Faculty of Electrical and Computer Engineering)	4	
Dean Office (Faculty of Information Sciences and Humanities)	4	
Dean Office (Faculty of Chemical & Process Engineering)	9	
Dean Office (Faculty of Architecture & Management Sciences)	1	
Registrar Office	223	
Finance	46	
Examination	53	
Services	234	19
Information Technology (IT Department)	40	
University Advancement and Financial Assistance (UA & FA)	4	
Student Affairs	35	
Industrial Liaison	8	
Planning & Projects	21	
Advanced Studies Research Board (ASRB)	4	
Quality Management Cell (QMC) / Quality Enhancement Cell (QEC)	5	
Medical Department	25	
Audit Department	8	
Office of Research, Innovation and Commercialization (ORIC)	4	
Technology Innovation Support Centre	0	
Procurement Cell	17	
Planning and Development	13	
Engr. Abul Kalam Library	57	
High Performance Computing Centre	2	
Instrumentation Centre	5	
MR ISO Office	12	
NED Academy	4	
Panjwani - Hissar Water Institute	1	
Project Directorate Mega IV	1	
Project Directorate Mega V	1	
Sultan Qaboos Oman I.T. Chair	4	
Total	871	19

16. Research Statistics

Research statistics for the year 2022-23 are as follows.

Research Centers	25
Ongoing Projects	227
Research Funding	Rs. 1,832 million
Research Publications	631
JCR Indexed Publications	403
Research Staff	129
International Conferences Held	11

17. Research Centres

Currently a total of 24 research centre are working the University.

17.1 Advanced Traffic Lab for Analytics And Simulation (ATLAS)

Pakistan needs to catch up in use of technology for operations of transportation systems and traffic management. Pakistan is on its way in improving its transportation infrastructure, therefore, a well-developed traffic operational plan is essential to make the infrastructure, efficient, economical and sustainable. This research centre is a pioneer in Pakistan in developing suitable traffic flow models, real-time measurement system, smart (adaptive) traffic controls and ITS for mass transit system in different cities of Pakistan. For more information visit <https://atlas.neduet.edu.pk/>.

17.2 Centre for Affordable Housing And Sustainable Built Environment (CAHSBE)

In order to move towards creating a capable and viable local construction sector, which is able to respond to the demands of sustainable infrastructure and housing development, through a rational and mutually agreeable strategic process, Centre for Affordable Housing & Sustainable Built Environment is established at NED University. This centre would help develop strategies that involve all stakeholders to deliver capital-intensive infrastructure as well as energy-efficient and low-cost housing facilities in a sustainable way. For more information visit <https://cahsbe.neduet.edu.pk/>.

17.3 Electronics Design Centre (EDC)

Electronics Design Centre performs cutting-edge fundamental and commercially driven research in electronic devices and circuits, radio frequency and microwave integrated circuits.

Since its inception (January 2011), EDC's primary objectives have been to investigate scientific fundamentals necessary to obtain incessant improvements in ultimate miniaturization, increased functionality, enhanced bandwidth and improved efficiency. EDC has several international linkages in US, Europe and Asia pertaining to its expertise. The Centre has produced three PhDs so far, and continues to enhance NED University's reputation for quality research output. At present, EDC consists of a RF (Radio Frequency) Lab, DC (Device Characterization) Lab, Design Tools and expertise including Sonnet, Cadence, Mentor Graphics, MicroTech (TCAD) and AWR Microwave. For more information visit <https://edc.neduet.edu.pk/>.

17.4 National Centre for Data Analytics and Cloud Computing (NCBC)

National Centre for Data Analytics and Cloud Computing is a unique public private partnership concept which will provide framework through which NEDUET can collaborate with leading ICT companies and national and international academia to accelerate the development and deployment of the cutting edge ICT solutions related to big data and its analytics on cloud using Open source platforms. For more information visit <https://ncbc.neduet.edu.pk/>.

17.5 National Centre for Cyber Security (NCCS)

The centre aims to develop a unified security framework which will be useful for stakeholders from all the related areas of computing (software, operating systems, network, Internet, databases, mobile, cloud, etc.). The unified security framework will be based on joint research in the four application domains which are End Point Protection, Internet Security, Digital Forensics, and Quantum Technology. The main focus of the centre is to develop defensive framework from malware and other Cyber threats by understanding their development, evolution, proliferation, prediction, damage, forensics and ensuring data security by efficient quantum based cryptographic methods. The Higher Education Commission has approved 118.04 Million PKR for the establishment of this centre. For more information visit <https://nccs.neduet.edu.pk/>.

17.6 National Centre for Artificial Intelligence (NCAI)

Through a long competitive process HEC has selected 06 national universities to establish affiliated labs of National Centre for Artificial Intelligence (NCAI). NED University won funding of two affiliated labs of NCAI that will be established and will constitute Research Centre for at Artificial Intelligence NED. Total funding of 167 Million will be used to establish two labs namely Neurocomputation Lab and Smart City Lab. For more information visit <https://ncai.neduet.edu.pk/>.

17.7 National Centre for Robotics and Automations (NCRA)

Higher Education Commission (HEC) and Planning Commission (PC), Pakistan invited to establish top-tier research-oriented National Centre of Robotics & Automation (NCRA). NCRA is designed to create national capacity in key emerging areas of Robotics and Automation that have received a lot of attention and focus in the recent years. NED University is selected for the Haptics, Human-Robotics and Condition Monitoring Lab (combined Lab of NED and MUET) worth Rs. 90 Million which is one of the 11 selected labs across the country. However, the Haptics and Human-Robotics Lab is going to be separately established at NEDUET worth Rs. 45 Million. The lab will specifically focus on the design and development of Haptics and Teleoperation Setups for disaster management and tele-surgery etc. In addition, the lab will also research in the design of the STEM-based education and assistive robots. For more information visit <https://ncra.neduet.edu.pk/>.

17.8 Centre for Advanced Studies In Renewable Energy (ASURE)

ASURE centre envisages to essentially cover multifaceted aspects related to alternative energy. They could cover the testing, certification, training and research aspects on a broader scale and take up specific projects of smaller size benefitting a larger populace. On the broader scale the areas which could be taken up are: 1) To provide testing facility related to renewable energy equipment, 2) To issue certificates and compliance report to the consignee, 3) To create awareness session related to renewable energy to the local industries and residential consumer, 4) Act as a long-term node to ensure the continuity of efforts on sustainable basis, 5) To bridge the gap between academia and industry through research, consultation and providing customized smart energy solutions. For more information visit <https://asure.neduet.edu.pk/>.

17.9 National Incubation Centre

NED University in collaboration with LMKT is hosting the National Incubation Centre; Karachi which was inaugurated the Prime Minister of Pakistan, Mr. Shahid Khaqan Abbasi on 11th May 2018. The centre will offer talented entrepreneurs and promising start-ups of Sindh quality incubation programmes, access to mentor and investor networks as well as technical resources.

17.10 K Electric Lab

K-Electric has partnered with NED University to establish its Electrical Engineering lab along with the provision of integrated equipment so as to further strengthening the platform for engineering students. The Lab equipment includes modified relays, test benches, transformers and various other valuable devices used in grid stations. Moreover, separate areas for lectures and experiments have been established as well. This lab is enabling electrical engineering

students to gain first-hand access to complex electrical equipment, while enhancing R&D activities in line with the utility's research driven approach.

17.11 Norwegian Centre of Petroleum Studies

The Norwegian Centre of Excellence in Petroleum Studies (NCEPS) is established with the cost of PKR 44.924 M in collaboration with Government of Kingdom of Norway. The Centre is the foremost facility in the country aimed to develop expertise for teaching and research in Petroleum Engineering discipline. Through the establishment of this centre a significant capacity building in teaching and research have been achieved. Four faculty members have received MS degree from NTNU, training of faculty in teaching and research at NTNU. It is strongly believed that the outcome of NCEPS will benefit the industry, the country and the region and will contribute in the improvement of the socio-economic conditions of the common people of Pakistan.

17.12 Centre for Software Research and Development (CSR D)

Center for Software Research and Development (CSR D) is an organization, based on the exploration and testing of upcoming technologies regarding Computer Science, which results in the enlightenment of the younger generation of researchers. In order to introduce something unique in Pakistan, current research projects of CSR D include AR, VR and MR; being analyzed to modernize the curriculum of teaching and learning. Similarly, worldwide prevailing technological companies, like Google, Facebook and Microsoft, etc. provide a platform for the youth to review and initiate work in this domain. CSR D aims to expand the work of Research and Development to an advanced extent, more specifically in the departments of Information Technology & Telecommunication. The center provides assets to not only developers market but also welcomes the student body to learn teaching pedagogy. The central aims and objectives include undertaking industrial research projects, producing Ph.Ds. and M.Eng/M.S (Computer Science), strengthening Postgraduate Research Programmes, and establishing the University-Industry Consortium. For more information visit <https://csrd.neduet.edu.pk/>.

17.13 Advanced Material Testing Facility

The Advance Material Testing laboratory is another state of the art facility. The facility is used to conduct full scale static and pseudo dynamic testing of various structural components of buildings and bridges. This facility is collection of various state of the art advance lab facilities for research and advance materials including Rapid Alloy Analysis Lab; Composite Materials Lab; Magnetic Materials Lab; Thermal Analysis Lab; Nano Materials Lab; Advanced Coatings Lab; Surface Engineering; XRD Lab; Advanced Ceramic Materials Lab; Powder Materials Characterization Lab; Advanced Materials Processing Lab; Scanning Electron Microscopy Lab and Transmission Electron Microscopy Lab.

17.14 Instrumentation Centre (IC)

The Instrumentation Centre at NED University of Engineering and Technology, an ISO 9001 certified organization, was established in 2005 by HEC funding and ever since, it is providing valuable and high quality engineering services internally and externally to industrial, academic, public and commercial organizations for diversified applications. The aim of Instrumentation Centre is to serve as Centre of Excellence focusing on testing, calibration and engineering services, traceable to National and International standards in accordance to ISO/IEC 17025:2005 standard. It also aims to provide continuing education and training in support of the University's strategic goal to become the leading provider of professional and continuing education programme, establish state-of-the-art laboratories to provide test & calibration facilities, and provide R&D solutions and consultancy to Industrial problems and helping them to reduce the waste and increase the productivity. For more information visit <https://ic.neduet.edu.pk/>.

17.15 DICE Energy Innovation Centre

NED-DICE is a joint collaborative initiative of NED University of Engineering and Technology and DICE Foundation. NED-DICE provides a platform for energy related innovations and for collaboration among academia, industry, government, entrepreneurs and expatriates to integrate science, technology and policy solutions to solve pressing energy challenges faced by Pakistan. NED-DICE aims to mobilize Energy Professionals of Pakistani origin around the world, to take advantage of their expertise and experiences for growth of energy sector in Pakistan. For more information visit <https://dice.neduet.edu.pk/>.

17.16 Panjwani Hisaar Water Institute

The ground breaking ceremony of the Panjwani Hisaar Water Institute at NED University was held on 4th May 2018 by the Chief Guest Mr. Muhammad Zubair, Governor Sindh. The institute is a collaborated effort of NED University, Panjwani Charitable Foundation and Hisaar Foundation. The institute will provide multidisciplinary research facility that will not be restricted to just water engineering but aims to integrate the currently isolated nodes of engineering, natural sciences, economics and social sciences to bring forth a new generation of water professionals. The institute will be home to advanced social and scientific water labs and be the hub of all cutting edge water related research which would be driven by the real world issues and hence bridge the gap between the world of academia and market demand.

17.17 High Performance Computing Centre (HPCC)

High Performance Computing Centre at NED University of Engineering & Technology manages high performance computational resources to address the miscellaneous

computational needs. With 10 TFLOPS of computational power and various scientific software along with related expertise, the centre provides an excellent state-of-the-art R&D and business opportunities for its users. For more information visit <https://hpcc.neduet.edu.pk/>.

17.18 Cowasjee Earthquake Study Centre

Cowasjee Earthquake Study Centre (CESNED) was established in 2001 after the devastating Bhuj earthquake. The Centre is currently administered by the Department of Earthquake Engineering. The objectives of this Centre include (a) housing national and global data pertaining to earthquake; (b) to act as a Centre for disseminating accumulated knowledge; (c) to respond to the emergency needs; and (d) be able to providing guiding principles for pre and post disaster earthquake mitigation. It has become a hub of the earthquake related activities with time. The vital role played by CESNED after 8th October, 2005 Kashmir earthquake led to its recognition as one of the two earthquake study centres in the Country. For more information visit <https://eqd.neduet.edu.pk/CESNED>.

17.19 NED Virtual Reality Centre (VR Centre)

The NED University has recently established a state-of-the art facility for integrating virtual reality in the education, research and practice. The facility that is housed at the Department of Civil Engineering is named as “NED University Virtual Reality Centre” is the first of its kind in the entire region (sub-continent). The facility houses three major system including, virtual teaming system, walking VR systems, and Projection VR system. There are multiple walking VR systems available at the centre to provide virtual immersive environment to the user specifically for VR designing, and VR based individual training, as per customized needs of the trainee. The centre is equipped with VR designing and development software, Building Information Modeling platforms, 3D to VR transformation platforms, and VR experience software platforms etc. The centre was indigenously designed for customized needs and has the capacity to be integrated and expanded towards Augmented Reality in near future. For more information visit <https://vrc.neduet.edu.pk/>.

17.20 Building Information Modeling Centre (BIM)

BIM is a state of the art Centre, which provides free service to industrialists for resolving pre-construction issues of high rise and complex structured buildings related to wind zones, emergency exits and temperature through developing visual models of the projects. The Centre is providing a platform to bring all engineers including civil, mechanical, electrical, structural and material to work together under the same umbrella while preparing building modeling using software that adds everything. This is first Centre of its kind in Pakistan established in collaboration with NED Alumni Association of Tri-State (NEDATS) with the total cost of Rs 3.5 million.

17.21 Product Development Centre

This Centre is fully equipped with complete range of sophisticated equipment and software to be used for re-engineering. Faro Arm scanning system along with Fused Deposition Moulding machine is available in the centre where reverse engineering of any product can be obtained and its prototype developed. The centre facilitates the industry for developing the prototypes.

17.22 Heritage Cell

The Heritage cell at Department of Architecture and Planning, NEDUET, is a research unit established in 2006 to support and sustain DAPNED's ongoing efforts towards creating general awareness of issues related to heritage conservation in Pakistan. Since its establishment in 1998 the department has endeavoured to develop technical support and professional capacity building in the field of heritage conservation through its activities of focused research, training and advocacy. Heritage Cell functions as a full-fledged research unit housed within NED University's historic 'City Campus'. For more information visit

https://www.neduet.edu.pk/arch_planning/Heritage/webpages/heritage.html#ad-image-1.

17.23 Water Modeling Centre (WMC)

The Water Modeling Centre (WMC) was inaugurated on May 21, 2013. This Centre serves as a research institute with urge of providing better understanding of private and public water resources and management strategies. Research and outsourced projects are conducted by the team of WMC. WMC is equipped with various computer based models for performing water supply analysis flood plain mapping, drainage system design, groundwater assessment, watershed simulation, climate change, computational fluid dynamics (CFD), irrigation system design, and many more related tasks. For more information visit

<https://ced.neduet.edu.pk/water-modeling-center>.

17.24 NED University Fire Lab

NED University Fire Lab is a unique experimental facility dedicated to understanding fire behavior and structural response to fire.

17.25 Centre for Quantum Technologies

The Centre for Quantum Technologies (CQT) brings together physicists, computer scientists and engineers to do basic research on quantum physics and to build devices based on quantum phenomena. Experts in this new discipline of quantum technologies are applying their discoveries in computing, communications, and sensing.

MAIN CAMPUS

University Road,
Karachi 75270
Ph: +92(0)21 99261261-8
Fax: +92(0)21 99261255

CITY CAMPUS

Maulana Din Muhammad Wafai Road,
Karachi 74200
Ph: +92(0)21 99213058
Fax: +92(0)21 32620793

LEJ CAMPUS

81-A Block-3, Memon Co-Operative Housing Society,
Karachi
Ph: +92(0)21 99230602-4
Fax: +92(0)21 99230602

THAR INSTITUTE OF ENGINEERING SCIENCE AND TECHNOLOGY

Shaheed Benazir Cultural Complex, Police Road, Near SSP Office,
Mithi, Tharparkar
Ph: +92(0)232 262079