

OVERVIEW and SUMMARY OF CSRD ESTABLISHED UNDER MOST ENDOWMENT PROJECT.

08 August 2023

The University has established 'Centre for Software Research and Development' (CSRD) within CSIT Department under MoST Endowment vide this University office order No. DR (Estab)/(1157)/(11290) dated 01-08-2012. The Endowment has been bestowed with emphasis on Information Technology.

The prime objective of the Centre (CSRD) is to promote research & development in the field of I.T. by producing Ph.Ds / M Phils /M. Engg /MCIT graduates and develop industrial research projects to strengthen liaison between University Academia and Industry. Beside the above prime objective:

- The objective in setting this Centre is that University should ascertain Software requirements from industries in the Country not exclusively for Karachi, and then their preparation and make them available to the ordering institutions.

The objectives for MoST Endowment project at NED as recorded in PC-1 are as follows:

- To strengthen Postgraduate Research Programmes leading to Master and Doctorate Degrees in various areas relating to I.T. & Telecommunication Sector.
- To produce three (03) Ph.D. and Twelve (12) M.Engg / MCIT in disciplines relating to I.T. & Telecommunication Sector per year.
- To undertake Industrial Research Projects which would be substantially strengthen University-Industry liaison.

The Industrial Advisory Board

The Industrial Advisory Board for the Centre of Software Research and Development (CSRD) has been formed by the competent authority of this university vide letter No. Acad/IAB/86(25)/8521.

Organization of the board is defined as follows:

- Convener - Executive Officer of the Centre
- Three (03) Members - Industrial Experts
- Two (02) Members -Academic Personnel

Industrial Experts

- Mr. Shahjahan Chaudhary (Director NIC Karachi)
- Mr. Ahmed Ayub (Co-Founder at Airlift Technologies)
- Mr. Fawwad Shabbir (Founder) i-Var Chain Pty Ltd (Australia). Augmented Reality and Virtual Reality and associated fields.

Academic personnel

- Dr. Jawaad Shamsi (Director Karachi Campus National University FAST, Karachi)
- Dr. Sajjad Haider (Professor at Institute of Business Administration Karachi)

CSRD Activities:

Currently the CSRD Lab is working on the immersive technologies to accelerate innovation in the field of computer science and to educate the next generation of researchers and practitioners. Right Now the Lab is focusing in the domain of AR and VR, web 3.0 Metaverse, Generative AI, EEG brain signals processing, Blockchain, Data Science and Odoo based ERP solutions research projects. These projects are unique in Pakistan and aim to bring change in conventional methods of learning and teaching paradigms as well as Industrial trainings using AR VR experiences. The Worldwide tech leading companies like Google, Facebook and Microsoft etc. are also pursuing breakthrough research and educating the next generation of innovators in the AR/VR exciting and rapidly expanding field. CSRD has established consortium with the groups in Pakistan and abroad.

In addition – CSRD is engage to conduct Professional hands-on trainings, Latest Technology embedded Market demands software tools oriented hands-on trainings for undergraduate and postgraduate students in collaboration with different departments of NED University, National and International organizations under the signed MoUs.

The linkden page may be accessed at: <https://www.linkedin.com/company/csrdlab/>

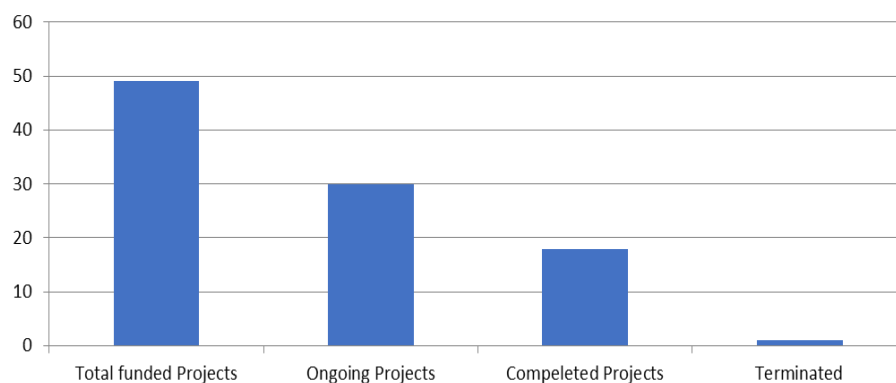
CSRD Activities:

Funds awarded PhD and other research Projects:

The prime objective of the Endowment Project is to conduct Industrial Research Projects, publish its findings and generate a fine proportion of Ph.Ds.

Till March 2023, total (49) research projects (44 PhD, 02 Master, 02 University Independent Research Projects, 01 Industrial liaison project via creating a Semiconductor/IC Design power house at NED University) are being funded under this endowment project with total cost of **Rs. 133.39 million** during the years 2016-17, 2017-18, 2018-19, 2019-20, 2020-21 , 2021-22, and 2022-23. One (01) is terminated – internal reasons. <https://csrd.neduet.edu.pk/Projects>

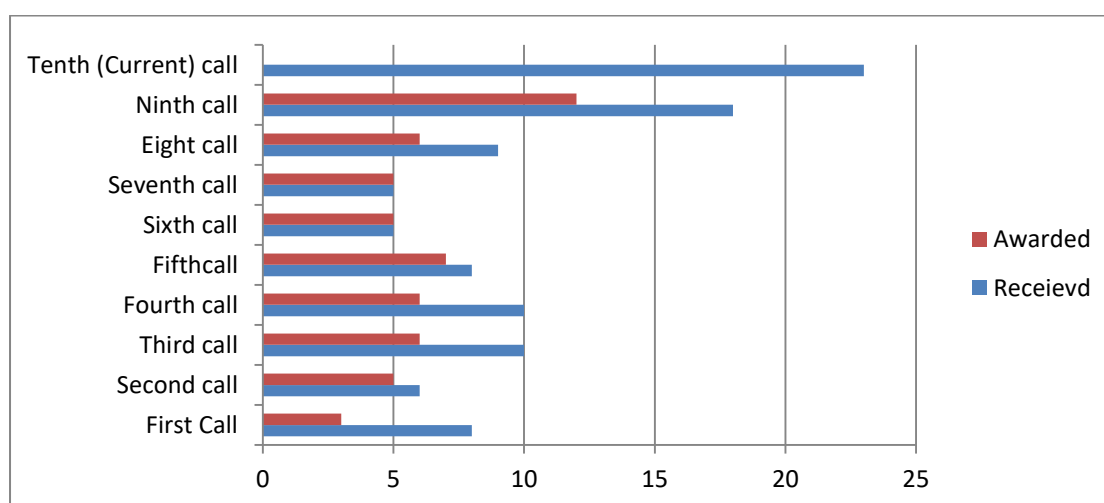
Status of Projects awarded



Status of Projects awarded under MoST Endowment funds.

To date till August 2023, (10) cycles of research proposal calls invitations have been initiated. Statistics of awarded in (9) different calls till dated March 2023 is given as under.

Statistics of Received and Awarded Projects against each Call



Summary of Projects Developed under CSRD:

Following is the brief description of projects developed under CSRD for the Academia and Industry.

1. Zakqada Web portal

Zakqada is a Web portal developed at CSRD in collaboration with an international organization, where the Donors and needful people can have digital meetup. The donors may donate directly or may assign any job to the skilled people. The progress is in working so that this portal will use AI to select appropriate needful person for a donor who aim to donate. The web link for the portal : <https://zakqada.com/>

2. Currently Development of web 3.0 based MetaverCity for learning – Chinese language course in progress.

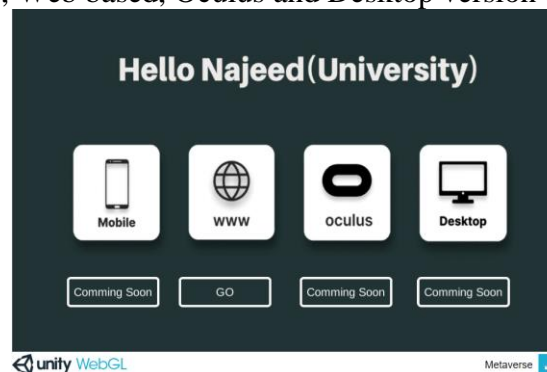


The Metaverse, a 3D digital space mixed with the real world and the virtual world along with web 3.0 technologies, has been heralded as a trend of future education. However, these are rarely contributed for students' perspective of classroom teaching.



Digital class room where students and teacher can engage with each other using their avatar.

Students will be able to use MetaverCity application using different versions including Cell phone, Web based, Oculus and Desktop version of the application.



Login and Access portal for Metaverse University Application.

They may be able to join virtual webinar to interact with teachers and other students in real-time, allowing for a more immersive and interactive learning experience of course contents..



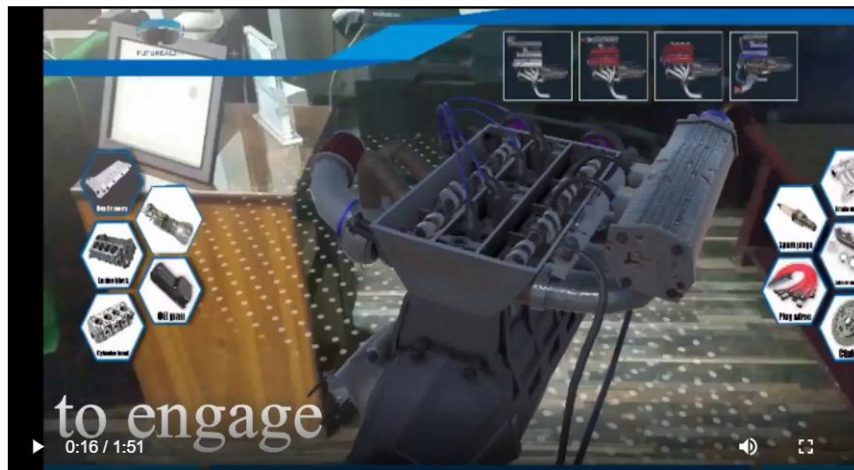
Virtual Webinar Room

3. AR/ VR model of Car Engine for Pak- Suzuki and NED University.

This car assembling engine project is especially designed for Pak- Suzuki Company as well as for the Automotive Department, NED University. This car engine model can be very helpful for engineering students to learn the different parts of an engine. They may view and learn in an interactive way how the different parts of an engine are connected. This project will encourage the students to explore and solve problems on their own. This will also provide high level guidance so that students can learn the assembly process in their own way.

The demo video of the engine model can be visualized at:

Augmented Reality (AR) Model for Car Engine

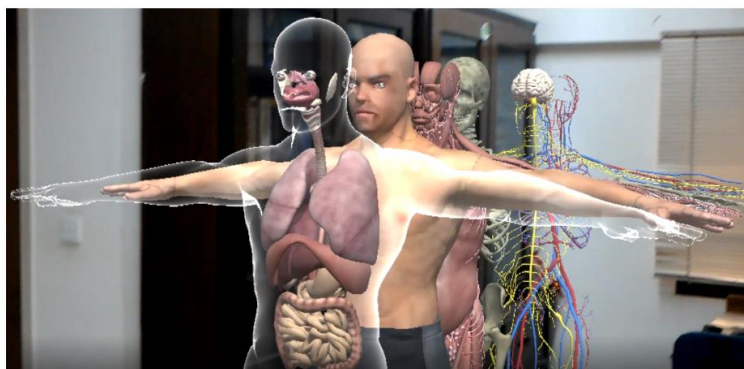


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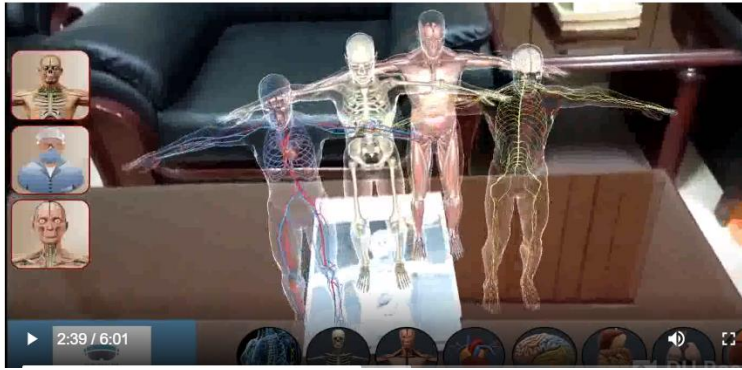
4. Human Anatomy Mixed Reality model for Medical students and practitioners

Mixed Reality model for a Human Anatomy is developed. This holographic 3D digital Human Anatomy Prototype can help medical students (Bio-Medical students at NED) understand the anatomical structure of human body. The demo video of the Human Anatomy model can be visualized at:

Human Anatomy Mixed Reality model



Augmented Reality (AR) Model for Human Anatomy

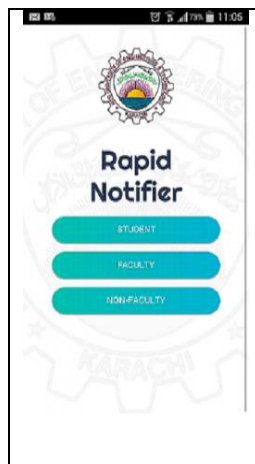


<https://csrd.neduet.edu.pk/>.

5. VR Model for Building Architecture.

A VR model is developed using 2D AutoCAD drawing to visualize in the 3D structure of a building. This model developed in consultation with Civil Engineering Department – Ned University. The project is in used for the teaching Urban, Civil engineering and Architecture students. <https://csrd.neduet.edu.pk/>.

6. Rapid Notifer for NED University.



NED Rapid Notifier mobile App is developed under CSRD. This app is currently successfully in use for sending notifications to the Students, Faculty and /or Non-faculty without any cost. This app can be downloaded from Play Store.

7. Masjid & Jamat Time Finder

Mobile App for Community.

This mobile App is developed under CSRD for community use. The app 'Masjid & Jamat Time Finder' is a quick and easy way to find jamat timings of a masjid near to the users' location and add new masjid on Google map along with the jamat times. This app can be downloaded from Play store.

8. Driving Simulator for NED University and city Government.

A driving simulator is developed with continuous consultation of prof. Dr. Mir Shabbar Ali, Dean CPL. Driving kit has been purchased for this purpose. The model is developed with aim to provide the City Government for testing driving skills and issuance of driving license based on automatic performance evaluation of the driver. This model can also be helpful for a Lerner driver to practice on the simulator before going for drive on roads.

Collaboration: Urban Engineering Department

9. VR Model for Building Architecture.

A VR model is developed using 2D AutoCAD drawing to visualize in the 3D structure of a building. This model is also developed in consultation with Prof. Dr. Mir Shabbar Ali, Dean CPL. The project will be used in the teaching Urban engineering and Architecture students.

10.Attendance Management system for NED University.

Mobile app for attendance management system has been developed for NED University. The app has been demonstrated the Pro Vice-Chancellor and the Deans. They have agreed in principle for it to be deployed at NED University as a pilot. Using this app the teacher can mark attendance on mobile phone and the student can also check their attendance record. The students and their parents would be notified immediately if the student is marked absent in the class. This app can be



Attendance
Management System

downloaded from Play Store.

In addition to above some are more projects have been developed or under develop whose details may be explore at csrd website. <https://csrd.neduet.edu.pk/>

Collaborations

Renowned organizations which are working with CSRD are as follows.



1. Crux International Canada <https://cruxanalytics.thinkific.com/>

Providing Online Trainings to the Professionals and NED graduates in Business Intelligence domain. Since December 2022 to March 2023, almost 65 participants in four (04) different batches has successfully completed BI professional training. The also provide mentorship and projects to the master's students of NED University to complete their Independent Study Projects (ISP).



2. Magna International <https://www.magna.com>

Magna International Inc. is a Canadian parts manufacturer for automakers. They train our NED University graduates in Data Science domain. Currently the offered paid internship to the 6 students and preparing a team in collaboration with CSRD as Data science Professional. In second phase the intend to extend collaboration and aim to higher services from CSRD to complete company tasks.



3. MoU is in progress with SHISPARE (PVT.) LTD. <https://shispare.com/>

Software Product Development, Consulting and Business Solutions company, helping Enterprises transform their businesses using technology and innovation, aim to conduct Professional trainings to the market professionals and NED University graduates as well as prepare a team at CSRD to develop software solutions for their clients.

Collaboration with National Centre for AI

As Co-PI of National Centre for AI continuous working is in progress with them. Some apps for smart city are under develop and discussion with DR. Khurram (PI of National Centre for AI).

Financial Contributions to NED University

Microsoft – HEC training boot camps.

Centre for Software Research & Development (CSRD) has set up Microsoft IT academy at NED University. Under this academy, HEC and Microsoft have arranged multiple boot camps. To date more than 20 Microsoft boot camps has been arranged in collaboration with HEC and Microsoft.

HEC has paid a modest amount and appreciation certificate to the NED University for arranging these training boot camps.

MOS Certification Exam conducted at NED

The Centre for Software Research & Development has arranged online MOS certification exam under HEC and Microsoft Education Alliance and the PEC initiative. The exam was offered for engineers and non-engineers both during September 2017 to December 2019. PEC officials were continuously in contact with the undersigned regarding the facilities provided to the candidates at NED University.

The exam was also conducted during Saturdays and Sundays by our dedicated team. A total of 2226 students have taken the Microsoft Office Specialist Certification Exams in Computer Science & IT Department's computer labs.



[MOS Certification | NEDUET CSRD Website](#)

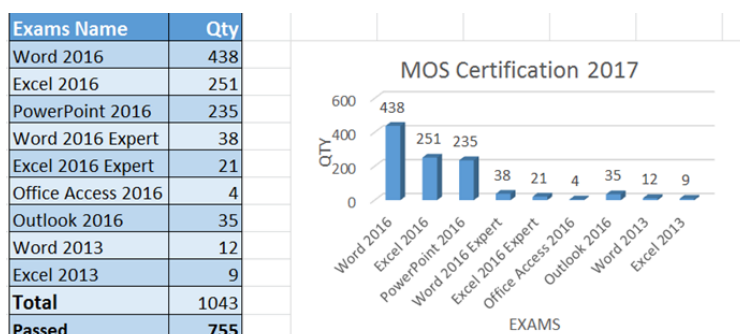
Technical Skill Bootcamp under CSRD

“Train the trainer high impact skills Bootcamp” in the emerging technologies Blockchain and Data Science, for NED University faculty members has been arranged in collaboration Ministry of IT & Telecom. The training Bootcamp period from is 12 to 16 week time which is started from 1 August 2023. Total 09 faculty members from different departments of the University are nominated for this program. CSRD will engage these trainees to start similar training programs at NED university for the faculty and students.

CSRD hosted Technology Boot Camps under Technical Skill Development program of Higher Education Commission and Microsoft Education in Karachi region. During November 2017 to May 2018, Eight (08) different boot camps in addition to a 3-days Data Science boot camp have been successfully conducted at NED University in collaboration with HEC and Microsoft.

List of Trainings Conducted by CSRD in Collaboration with HEC and Microsoft

Following Microsoft trainings have been arranged by Centre for Software Research & Development (CSRD) on behalf of HEC:



Serial No.	Boot Camp	Training Dates
1	Windows 10	18-19 December 2017
2	Azure & Cloud	11-12 December 2017
3	SharePoint	1-2 January 2018
4	SharePoint	3-5 January 2018
5	Exchange Server	10-11 January 2018
6	Microsoft Dynamics	6-7 February 2018
7	SQL Server	22-23 February 2018
8	Windows Server 2016	27-28 March 18
9	Microsoft Office Advance	09-10 April 18
10	Data Science	16-18 April 2018
11	Dynamics	08-10 April 2019
12	Azure	15-17 April 2019

Online MOS Certification Program under HEC and Microsoft Education Alliance and the PEC initiative conducted by CSRD.

The exam was offered for engineers and non-engineers both. A total of 1226 students have taken the Microsoft Office Specialist Certification Exams in Computer Science & IT Department's Labs.

A total of 1226 students have taken the Microsoft Office Specialist Certification Exams in Computer Science & IT Department's Labs out of which 471 passed and 755 failed.

Serial No.	Name	No. of Candidates
1	Word 2013	90
2	Excel 2013	18
3	PowerPoint 2013	10
4	Outlook 2013	2
5	Word 2016	566
6	Word 2016 Expert	19

7	Excel 2016	300
8	Excel 2016 Expert	29
9	PowerPoint 2016	154
10	Access 2016	6
11	Outlook 2016	15
12	Word 2010	15
13	Excel 2010	2
	Total	1226

Online details of above trainings may be found:

[MOS Certification | NEDUET CSRD Website](#)

DI National tournament STEAM Event.

The Centre for Software Research & Development arranged a 3 days Destination Imagination National tournament STEAM Event in collaboration with E-Services & Technologies at NED University during 17 – 19 January 2019. Five different teams from NED University participated and qualified for final was held in May 2019 in Kansas City USA.

E-Services & Technologies has paid a lump sum amount to the NED University for arranging this event.



csrd.neduet.edu.pk/sites/default/files/csrd/video/Dest_imagine.mp4

A MEMORANDUM OF UNDERSTANDING (MoU) is signed between Centre for Software Research & Development (CSRD) and NED Academy.

The purpose of this MOU is to advance professional development in the field of computer science, IT and related areas through collaborative offering of training courses and programmes.

This MOU establishes the terms and conditions under which NED Academy and CSRD will collaborate to conduct high quality, indigenously developed or internationally recognized training, certification and diploma programmes.

The MoU was initiated by Dr. Najeed Ahmed Khan (Caretaker: MoST Chair Professor) and Prof. Dr Rizwan Ahmed Farooqui (DG NED Academy) whereas endorsed by Prof. Dr. Noman Ahmed (Dean ISH/AMS) and Prof. Dr. Muhammad Tufail (Pro-Vice chancellor).

MoU is signed between CSRD and NED Academy to develop training materials and launch hands-on courses for industries and university personals. Till now SAP ABAP, Data Science, Artificial Intelligence and Graphics design hands-on courses and summer programs for school children has been offered. CSRD charge only trainers and staff services fee from the generated revenue.

Trainings Conducted under CSRD

Professional trainings and skill development learning courses including PGD and UGD programs are in progress in collaboration with CCEE - NED Academy.

Japanese Delegation visit at NED University.

The Centre for Software Research & Development (CSRD) arranged (02) visits Japanese delegation which includes JICA team and the JETRO people and delegates from Japan IT industry to visit NED University on 4th February 2019 and 1st February, 2020.

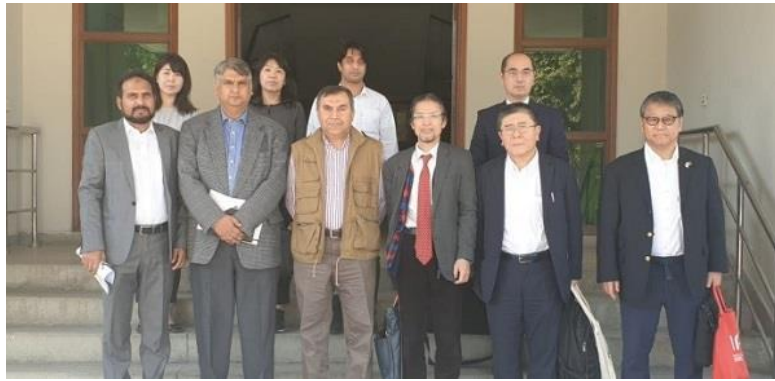
During the visit the research and development progress at the University was demonstrated explicitly. The delegation visited especially Centre for Software Research & Development (CSRD) and showed interest in the AR/VR projects developed at CSRD. Their visit at CSRD can be visualized at:

https://csrd.neduet.edu.pk/japan_visit

The main purpose of delegates was to visit NED research centres and meet with students. So in future, students and job exchange program will benefit the NED University students to go to Japan for working on latest technology domain areas and also to find opportunities to collaborate with IT industry in Japan.



Japanese delegation visit on 4th February 2019



Japanese delegation visit on 1st February 2020



Summer kids learning programs in collaboration with NED Academy.

SUMMER CAMPS

2-month Certificate Courses All courses are hands-on

Commencement: June 3, 2023 Age group: 10 y

Duration: 7-Week (two sessions per week)

- IoT FOR BEGINNERS**
Hands-on project based learning
Mon & Wed | 10am - 12pm
- LEARN WITH FUN PYTHON CODING**
Mon & Wed | 12pm - 2pm
- WEB DESIGNING**
Mon & Wed | 2pm - 4pm
- BASIC ELECTRONICS**
Tue & Thu | 10am - 12pm
- GRAPHICS DESIGN**
Tue & Thu | 12pm - 2pm
- AR, VR & MR TECHNOLOGIES EX**
(Augmented Reality, Virtual Reality & Mixed Reality Ha
Tue & Thu | 2pm - 4pm
- ENGLISH LANGUAGE (SPEAKING S**
Group 1: Mon & Tue, 3pm-5pm
Group 2: Sat and Sun, 10am-12pm
- ENGLISH LANGUAGE (ESSAY WRIT**
Group 1: Wed & Thu, 3pm-5pm
Group 2: Sat and Sun, 12pm-2pm

Rs. 6,000/- per month for each course

from neda/nedaacademy
+92-21-99261261-8 fax: 2297, 2197
http://academy.ned.edu.pk

Center for Software Research and Development (CSRD), NED University has launched Summer kids learning program successfully for the years 2021-2022 1st now in 2023. This Hands-on training Programs for Professionals, Students and young

people. Especially designed trainings for young people (kids) received much appreciation from parents.

To continue to engage them in learning by doing multiple courses are designed form them. The aim is to brought out inner skills of the young people and motivates them to move forward with confidence from their early stage of life.

The centre is eagerly looking for collaborations with Industries to enhance in-house working capability and to cater society in better way.

Prof. Dr. Najeed Ahmed Khan

Executive Officer CSRD