

Department of Electrical Engineering  
**EE-401 Final Year Design Project**  
**Project List**



F/SOP FYDP/02/00

Batch <u>2021</u>	Semester <u>Fall 2024</u>
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S.no.	Project title	Student name	Supervisor/co-supervisor	Industry
1	Improving Transient stability in transmission lines using facts devices along with synchro-phasor technology	Muhammad Uzair Rashid Muhammad Mudassir Sanaullah Zaeem Ali	Dr. Muhammad Ali Memon	
2	Solar Powered Weather Station	Muhammad Usman Muhammad Ahmed Sohail Iqbal Syed Tahami Talib Umrao	Ms. Shahnaz Tabassum	
3	Enhanced Hybrid Renewable Energy System with Solar Tracking for Optimal Solar Power Generation and Wind Energy Integration	Abdul Rehman Ansari Zakir Ullah Simrah Shahid Amna Ahmed Khan	Ms. Najia Naveed	
4	Smart energy meter using IOT, Load control and bill prediction using python algorithm	Kabir ahmed siddiqui Muhammad moiz khan Alina Mallick Anabia Shahid	Dr. Raja Masood Larik	
5	Accurate state of charge (SoC) estimation for Lithium-ion batteries using Deep Learning techniques	Ushna Asim Ilsa Kashif Wardah Mushtaq Zahra Khan	Mr. Hammad Uddin	
6	Design of Low-Power Vision Sensor Node Using FPGA for Object Detection	NAWAB NAVEED TALHA ANIS MUHAMMAD HASHAAM MUHAMMAD OMER AHMED SIDDIQUI	Prof. Dr. Saad Ahmed Qazi	DreamBig Semiconductors

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7	Modeling, analysis & mitigation of transformer energization effect on power system using PSCAD	Aleshba Rauf Daniya Khalid Ayesha Azeem Areeba Yaseen	Dr. Muhammad Mohsin Aman	
8	Development and Enhancement of a Circuit Breaker Test Bench with Integrated Measurement System	Nafees Touheed Saim Ahmed Atta Ur rehman Mahnoor Iqbal	Dr. Muhammad Mohsin Aman	
9	ACCURATE FAULT LOCATION METHOD FOR MULTIPLE FAULTS IN TRANSMISSION NETWORK	S.M Zargham Jafri Ahmed Hasan S. Umar Ahmed M. Umar Nadeem	Dr. Abdul Ghani Abro	
10	A Comparative Analysis of Residential Three-Phase Distribution Systems and Split-Phase distribution Systems for Karachi	Aban Khan Ayesha Arif Wareesha Shaikh Naima Mansoor Syed	Ms. Najia Naveed	K - Electric
11	Model Wireless Power Transfer-Enabled Wound Rotor Synchronous Motor Framework to Optimize Rotor Efficiency of Electric Vehicles	Arisha Sundus Rumaisa Shakeel Fatima Khan Syed Sharjeel Saleem	Dr. Umbrin Sultana	
12	End-to-End machine learning for rapid fault detection in Series compensated transmission lines	Uraiba Rameesa Fatima Aleesha Anum Rameesha Qadir	Mr. Fezan Rafique	

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13	Single line to ground fault detection via wavelet transform method, to design protection devices	Syeda Maryum Muskaan Iqbal Dua Abbas Umaima Maqsood	Dr. Beenish Sultana	
14	Design and Implementation of An Artificial Neural Network-based MPPT Algorithm for Optimization of Solar PV System	Hafiz Muhammad Abrar Shams Shayan Mumtaz Muhammad Taha Sana Noor	Ms. Aiman Najeeb	
15	5 axis CNC machine: Control design of simultaneous operation of all axis with updated software and mechanical structure.	Sameed Ansar Ahmed Mubasshir Ali Sheikh Muhammad Bilal Muhammad Uzair Irfan	Dr. Riaz uddin	
16	Innovative Integration of Solar PV and Battery Storage Systems for Energy Efficiency: A Project with Reon Company	Waleed Ali Asra Asif Umer Iqbal Umair Sheikh	Dr. Raja Masood	REON ENERGY LIMITED
17	Implementation of Control Algorithm for Watch-Dog Robot of Haptics Lab at NED University: Experimental Validation of Kinematic Control and GAIT Control Strategy	Abdul Rafay Khan Muhammad Umer Baig Ateeb Ahmed Qureshi Muhammad Adil Haider	Dr. Riaz uddin	
18	Development and Optimization of Pakistan's Generation Fleet and Transmission System Model Using PyPSA	HASSAAN BIN ARIF Zeeshan Haider ABDUL RAFEH SAAD BAIG	Dr. Muhammad Mohsin Aman	Mak power
19	Advanced Server-Based NILM System for Optimized Energy Monitoring in Large Residential Consumer Networks.	Usama Mohsin Aisha Subha Ansari Sourah Yousuf Syed Abshar Ali	Mr. Muhammad Hassan ul Haq	

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20	Enhanced SoC Charge Estimation for Lithium-Ion Batteries using Time-Varying Parameters through Extended Kalman Filters	Syeda Hammah Ahmed Muzna Sajid Hanfi Laiba Aqeel Amber Ali	Mr. Muhammad Uzair Khan	
21	To Optimally Set and Compare Restrained and High Impedance Differential Relays for Multi-terminal Transmission Lines in an IEEE Bus System	Syed Muhammad Dawood Daniyal Masood Muhammad Faiz Usman Abbasi	Dr. Abdul Ghani Abro	
22	Design and Implementation of 250-500Watts DC-DC Full-Bridge Phase Shift Converter with automated feedback control for enhanced Regenerative Braking efficiency.	Tooba Rashid Ayesha Ashfaq Waniya Fatima Kainat Arshad	Ms. Aiman Najeeb	
23	Enhance Energy Monitoring System for Data Acquisition & using Machine Learning for Predictive Analysis	Duaa Fatima Seerat Nasrullah Nimra Nadeem Romaisa Farooq	Ms. Najia Naveed	
24	Experimental Implementation of Kinematic Control and GAIT Control Strategy for Biped Humanoid Robot of Haptics Lab at NEDUET	Abdul Kabeer Abbas Khan Abdullah Sultan Alvia Fatima Wania Ansari	Dr. Riaz uddin	
25	Design of BiPAP Machine: Extension of Existing CPAP Machine Haptics Lab at NED University to BiPaP feature for respiratory syndrome Patients.	Hiba Hashmi Bisma Zaman Yumna Munir Syed Muhammad Qaim Rizvi	Dr. Riaz uddin	

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26	IoT-based health monitoring and fault detection of industrial AC induction motor for efficient predictive maintenance	Syed Noorul Yousufuddin Syed Muhammad Samar Mehdi Abdullah Bin Saleem Syed Jawwad Riaz	Dr. Muhammad Ali Memon	
27	Dynamic Power Optimization for Smart Homes: Real-Time Controlling of Appliances in Response to Utility GRID signals.	Muhammad Wasam khan Hassan raza Hasnain Raza Fareh kamran	Dr. Raja Masood Larik	
28	Design and Implementation of Isolated Bidirectional Dual Active Bridge Converter	Syeda Ayesha Tirmizi Ammar Humna Asad Hafsa Zaveri	Ms. Aiman Najeeb	
29	FPGA-Based Enhanced Machine Vision Pipeline for Metal Surface Anomalies	Fehmina Anusha Khan Dur e Sameen Fatima	Prof. Dr. Saad Ahmed Qazi	DreamBig Semiconductors
30	Design and Implementation of Dual Axis Solar Tracker with H-Cascaded Multilevel Inverter	Usman Ahmed Siddiqui Ayesha Khurram Zarmin Khan Arhumm Khan Guddaro	Dr. Raja Masood Larik	Amreli Steels
31	Desktop application for crack analysis of solar panel using EL and thermal imaging	AREEBA AFTAB JAWERIA SAIM UDDIN MUHAMMAD SUFYAN	Dr. Muhammad Mohsin Aman	
32	State of Charge (SOC) Estimation For Lithium Ion Battery Using Model Based Technique	Sana Irfan Fatima Tariq Neha Alvi Eesha Farooqui	Mr. Hammad Uddin	

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33	Simulation of Optimized Renewable Energy Integration using an AI Technique to the existing KE network	Rija Siddiqui Hafsa Fatima Batool Farhan Sheikh	Dr. Muhammad Ali Memon	
34	To develop a methodology for setting overcurrent relays in a mesh network and ensure proper coordination to enhance system protection.	Alishba Laiba Ali Yusra Sarwar Areeba Mehmood	Dr. Abdul Ghani Abro	
35	Implementation of Real-Time Power Frequency Estimation using Goertzel Algorithm on ARM Cortex M4 for Low-Cost Power Quality Monitoring.	Syed Affan Hussain Wajih Uddin Syed Alyan Ali Muhammad Arshad Khan	Mr. Hafiz Muhammad Furqan	
36	Customised Robotic Arm Development for Packaging Industry: Inclusion of Automatic Control and Kinematic Design for Pick and Place Task	Shayan Sheikh Tahir Khan Basil Farooqi Noor Rehman	Dr. Riaz uddin	
37	Detailed Technical Design of 33kv distribution network and integration with existing 11kv distribution network	Manahil Amir Romaisa Mobeen Rida Saleem Aiman khan Baber	Dr. Raja Masood Larik	KElectric
38	Predict the health indices of lithium ion battery using advanced neural network (ANN) algorithm	Mariya Ajmal Wariha Shams Asma Saleem Sundus Siddique	Dr. Abdullah Munir	

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39	Design and Development of a Wearable Gadget for Enhanced Energy Harvesting Using Human Motion	Syed Zakir Abbas Rizvi Muhammad Qasim Kashif Sohail Muhammad Muneeb	Dr. Abdullah Munir	
40	Scalable real time Non intrusive load monitoring system	Syed Muhammad Owais Abdul Sami Ali Hamza Dilshad Syed Shuja Abbas jaffery	Dr. Abdullah Munir	
41	AI Enhanced Temperature Monitoring and Predictive Maintenance for Industrial motors with pump load testing	Fahad Ahmed Sajjad Ali Kashif Ahmed Taimoor khan	Dr. Muhammad Ali Memon	
42	IoT-Based Real-Time Monitoring System for the Textile Industry	Izhan Kaleem Muhammad Fozan Aleem Ammar Aijaz Abdus Samad Tafhimi	Mr. Muhammad Hassan ul Haq	Watsun Engineering & Solutions
43	Hardware-Based Performance Analysis of P&O MPPT Algorithms Using Multiple DC-DC Converters in Solar PV Systems.	Fizzah khan Rumaisa Awan Ifrah Ahmad Alishba Siddiqui	Mr. Muhammad Uzair Khan	
44	Smart AgriBot: Precision farming with AI and Google Earth	Zorain Khan Muhammad Raahim Hamza Atya	Dr. Beenish Sultana	

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45	Advanced Regenerative Braking with Hybrid Energy Storage Systems	Muhammad Umar Aleem Syed Abdur Rehman Abdullah Tariq Ashar Ali Khan	Mr. Muhammad Uzair Khan	
46	Optimal Integration of EVs and DGs into IEEE 33 Bus system	Arsalah Qamar Waliya Aslam Bisma Ahmed Kainat Meraj	Ms. Aiman Najeeb	
47	To Integrate a Reliable IOT-Based Remote Monitoring System For The Critical Parameters Of A Gas Turbine's Operational Environment.	Muhammad Mohtashim Ali Mustafa Abdullah Muhammad Umer Qamar Syed Ammar Ali	Dr. Muhammad Ali Memon	Bin Qasim Power Station - II K-Electric
48	Advanced Protection Scheme of No Load and over load for Induction Motor	Arsalan Shahzad Suhaib Ahmed Muhammad Umar Ahmed Hamza Ahmed Siddiqui	Ms. Najia Naveed	
49	Simulation Of Enhanced Instantaneous Power Theory (EIP) based Harmonic Compensator under weak Grid Conditions using MATLAB	Muhammad Rafay Khan Ain Fatima Areej Asif Syed Anoosha Jilani	Mr. Hafiz Muhammad Furqan	
50	Non intrusive load monitoring for load management during peak hours	Muhammad Taha Asim Muhammad Shehreyar Faisal Yumna Rafiq Ifrah Khan	Ms. Farah Andaleeb Siddiqui	
51	Virtual Power System Generator & Analyzer	Muhammad Rafay Muhammad Sabeeh Hassan Tanzeel Ahmed	Mr. Muhammad Hassan ul Haq	Siemens



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52	Comparative analysis of conservator type and sealed type distribution transformer for enhanced operational and maintenance efficiency	TANYA KHURRAM AREESHA NOOR ALI HAIDER MUBASHIR SHAHZAD	Ms. Shahnaz Tabassum	
53	Autonomous Lawn Mowing Robot: Integrating AI and Computer Vision	MUHAMMAD TAHA ZAMAN Muhammad Owais Areesha Siddiqui Laiba Saif	Ms. Aiman Najeeb	
54	Experimental Validation of SLAM extension of Social Interactive Robot of Haptics Lab at NEDUET	Abdulrehman Amin Abdul Hannan Syed Ali Ahmed Shazma Shafqat	Dr. Riaz uddin	
55	Comparative analysis of AI-based fault detection in a simulated power system using two algorithms	Ahmed Ali Insherah Mohsin Amna Farooqi Syed Danyal Ahmed Zaidi	Ms. Farah Andaleeb Siddiqui	
56	An Innovative Approach to Ionic Propulsion: Power efficiency, Real-Time Control, and Voltage Optimization	Sheikh Muhammed Tabish Ali Sameer Ali Bin Zakir Syed Muhammed Bazif Feroz Roll No: 21166	Dr. Abdullah Munir	
57	Design Intelligent Energy Measuring Device for Residential Consumers to Optimize Energy Consumption.	Dawood Victor Gill Mohsin Mumtaz Fakhir Khan Aaliyan Shoaib	Dr. Umbrin Sultana	

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58	Modelling of Control System Trainer IT-5200 and Implementation of its Feedback Control through SIEMENS S7-1200 Programmable Logic Controller (PLC).	Muhammad Ammar Shah Zain Ahmed Muhammad Azhar Toufique Syed Mohammad Ali Naqvi	Mr. Muhammad Hassan ul Haq	Siemens
59	Data-Driven Fault detection and classification in Hybrid AC/DC Microgrids using Machine Learning	Anas Irfan Hiba Khawar Iqra Tariq Simrah Saleem	Dr. Umbrin Sultana	
60	Object detection using PYRAMID POOLING TRANSFORMER	MUHAMMAD MARAJ KHAN MUHAMMAD UMER FAREEHA NADEEM NEZAMI AQSA AIJAZ	Dr. Mirza Muhammad Ali Baig	

FYDP Coordinator

*Bavish*

FYDP Review Committee Head

*Aamir Ali*

Chairperson

*Aamir Ali*