MUHAMAD HASAN RAMDANI

ELECTRICAL ENGINEERING INTERN

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ABOUT ME

I am a Bachelor of Applied Science (D4) student in Electrical Engineering at Politeknik Caltex Riau with a strong interest in power systems, protection systems, control systems, and industrial automation. I possess strong analytical skills, am able to work effectively both independently and as part of a team, and adapt quickly to new environments. I am committed to continuously developing my technical and professional competencies and am eager to make meaningful contributions to the industry.

WORK EXPERIENCE AND PROJECTS

Electrical Engineer Intern, PT. PLN Mandau Cipta Tenaga Nusantara – North Duri Cogeneration Plant **Feb - June 2026**

- Completed a four-month internship in the Electrical Engineering Division at a cogeneration power plant.
- Studied power generation systems, electrical power distribution, and Single Line Diagrams (SLDs).
- Analyzed generator protection systems using Beckwith M-3430, M-3420, and M-3310 protection relays.
- Assisted in the inspection, monitoring, and evaluation of electrical equipment.
- Collaborated with engineers on the maintenance and troubleshooting of electrical systems and equipment.
- Prepared technical reports on protection relay coordination based on field data.

UPS Battery Bank Design and Installation Planning **May - June 2026**

- Calculated and planned the required battery bank capacity for an Uninterruptible Power Supply (UPS) system at the North Duri Cogeneration (NDC) power plant.
- Determined the appropriate number and configuration of batteries to meet UPS backup time and load requirements.
- Performed battery bank wiring and cable routing based on electrical design specifications.
- Designed a battery rack and developed a complete 3D model, including the battery layout and wiring arrangement, using AutoCAD 3D.
- Prepared technical drawings and installation documentation to support the implementation of the UPS battery system.

Automatic Transfer Switch (ATS) Panel – Utility Power to Generator (Manual & Automatic Modes) **Mar - July 2025**

- Designed and implemented an Automatic Transfer Switch (ATS) panel for automatic and manual power transfer between utility power and a generator.
- Installed and configured a 4-pole 100A motorized Changeover Switch (COS) for power transfer control.
- Performed wiring, testing, and troubleshooting of both control and power circuits.
- Ensured proper synchronization, safety interlocking, and reliable load transfer operation.
- Evaluated panel performance and verified electrical safety compliance in accordance with applicable electrical standards.

Mobile Remote Control System Using Blynk & ESP8266 (NodeMCU) **June - July 2025**

- Designed and developed an IoT-based mobile remote control system using the ESP8266 (NodeMCU) microcontroller and the Blynk platform.
- Configured wireless communication to enable real-time remote monitoring and control via a smartphone application.
- Integrated input and output devices to support reliable remote operation over a Wi-Fi network.
- Performed hardware assembly, circuit wiring, programming, testing, and troubleshooting to ensure stable system performance.
- Validated system functionality, responsiveness, and communication reliability under various operating conditions.

EDUCATION

Politeknik Caltex Riau **Aug 2023 - Now**

Bachelor of Applied Science in Electrical Engineering
GPA: 3.65/4.00

SMAN 7 MANDAU **Aug 2020 - Sep 2023**

ORGANIZATIONAL EXPERIENCE

Secretary of the Communication and Information Division (Kominfo) **Sept 2024-Sept 2025**
Electrical Engineering Student Association, Politeknik Caltex Riau

- Led and coordinated the division's administrative and secretarial activities.
- Managed organizational administration, correspondence, and document archiving.
- Prepared meeting minutes and maintained organizational documentation.
- Coordinated the preparation of proposals, reports, and other official documents.
- Ensured the completeness and accuracy of administrative documents for all work programs.
- Collaborated with executive board members to support the planning and implementation of organizational activities.

SKILLS

- SoMachine
- MS Office
- Electrical Cad
- MATLAB
- Team Work
- Critical Thinking
- Problem Solver