Engineering Final Year Project List

Electrical Engineering Projects

1. Smart Prepaid/Post-paid Energy Billing System – A smart energy meter that tracks usage and allows pre- or post-paid billing.
2. Power Factor Improvement with Capacitor Bank – A system for improving power factor and frequency measurement.
3. Automatic Power Theft Detection System – Detects and prevents unauthorized electricity usage.
4. Single Phase Fault Detection System – Monitors faults in power transmission lines and provides alerts.
5. Three Phase Fault Detection System – Monitors faults in power transmission lines and provides alerts.
6. Wind Turbine Power Generation – Generates electricity using wind energy.
7. Tap Changing Transformer – A transformer that adjusts voltage levels based on demand.
8. Advanced Project Idea: Smart AI-based energy grid management system with real-time optimization.
9. Accident Detection System using GPS & GSM – Sends alerts when an accident is detected.
10. Voice-Controlled Home Automation System – Allows control of home appliances via voice commands.
11. RFID-Based Authorized Car System – Uses RFID for vehicle access control.
12. GSM-Based Transformer Protection – Monitors transformer health and alerts via GSM.
13. Hydro Power Generation – Generates electricity using moving water.
14. Smart Shopping Trolley – A trolley with automated billing and navigation assistance.
15. Advanced Project Idea: AI-powered electronic health monitoring system for patients.

Robotics Projects

16. Fire fighting Robot – A robot that detects and extinguishes fire automatically.
17. Gesture-Controlled Robot for Disabled Persons – A robot controlled by hand gestures.
18. Surveillance Robot – A robot equipped with a camera for monitoring areas remotely.
19. Virtual Telepresence Robot – A four-wheeled robot allowing remote presence via video streaming.
20. 4-DOF Robotic Arm – A robotic arm with 4 degrees of freedom for precise movements.
21. Advanced Project Idea: AI-powered autonomous robotic assistant for industrial applications.

Power & Renewable Energy Projects

22. Wireless Power Transmission System – Transfers power without physical wires.
23. Dual-Axis Solar Tracker System – Increases solar energy efficiency by adjusting panel angles.
24. Solar Wind Hybrid Inverter System – Combines solar and wind power for a more reliable energy source.
25. Heat Waste Energy Generation System – Converts heat waste into usable electricity.
26. Regenerative Braking System – Captures energy lost during braking and reuses it.
27. Advanced Project Idea: AI-integrated smart grid system for optimal power distribution.

Automation & IoT Projects

28. Home Automation with Voltage & Current Monitoring – A smart system for remote home control.
29. IoT-Based Load Management System – An intelligent energy distribution system.
30. IoT-Based Smart Agriculture Monitoring System – A system that automates irrigation and crop monitoring.
31. IoT Weather Monitoring System – Tracks environmental conditions remotely.
32. IoT-Based Smart Fire Detection & Extinguishing System – Detects and extinguishes fires automatically.
33. Advanced Project Idea: AI-powered predictive maintenance system for industrial automation.

Mechanical Engineering Projects

34. Automatic Solar Grass Cutter – A robotic system for cutting grass using solar energy.
35. CNC Laser Engraving Mechanism – A CNC-based machine for engraving designs on wood and metal.
36. Power Generation Using Speed Breaker – Converts mechanical energy from speed breakers into electricity.
37. Bottle Filling Capping & Mechanism with Stepper Motor – A system for automating bottle filling & capping in industries and Student Projects.
38. Advanced Project Idea: AI-powered industrial robotic arm with real-time object recognition.

Industrial & Manufacturing Projects

39. Vision-Based Bottle Filling & Capping Machine – A smart manufacturing system for filling and capping bottles.
40. Segregation of Quality Product on Production Line – A system to separate defective products using AI.
41. Automatic Packing Machine – Automates the packaging process using sensors and stepper motors.

42. Autonomous Path-Following Robot – Uses sensors and an Arduino to navigate predefined paths.
43. AI-Based Object Detection Robot – Uses a Raspberry Pi camera for object recognition and tracking.
44. Hand Gesture-Controlled Robot – Controlled via hand movements using an accelerometer and Arduino.
45. AI-Powered Surveillance Drone – A drone with facial recognition and motion tracking.
46. Warehouse Management Robot – A robot that sorts and transports items using Raspberry Pi.
47. Self-Balancing Robot Using Arduino – A two-wheeled robot that balances itself dynamically.
48. Obstacle-Avoiding Robot – Uses ultrasonic sensors to detect and avoid obstacles.
49. Smart Wheelchair with Brain-Controlled Interface – Uses EEG signals to move based on brain activity.
50. Advanced Project Idea: AI-integrated robotic arm for industrial automation with deep learning for precision tasks.

Smart Agriculture Projects

51. Arduino-Based Smart Irrigation System – Controls water flow automatically based on soil moisture.
52. IoT-Based Precision Farming System – Uses sensors to monitor temperature, humidity, and soil nutrients.
53. Greenhouse Automation Using Raspberry Pi – Controls temperature, humidity, and lighting for optimal crop growth.
54. Smart Hydroponics System – Uses IoT sensors to monitor nutrient levels in a soil-less farming setup.
55. Pest Detection System Using AI & Raspberry Pi – Identifies pests on crops using computer vision.
56. Weather-Based Crop Selection System – Uses historical weather data to recommend the best crops for a given region.
57. Solar-Powered Automatic Seeding Machine – Plants seeds in a controlled manner based on field mapping.
58. Smart Fertilizer Dispenser – Dispenses the right amount of fertilizer using AI-based plant health detection.
59. Advanced Project Idea: AI-powered plant disease detection using Raspberry Pi and deep learning.
60. Arduino-Based Home Automation Using Voice Control – Controls appliances using voice commands.
61. Raspberry Pi-Based Smart Security System – Uses facial recognition to unlock doors.
62. IoT-Based Smart Lighting System – Automatically adjusts lighting based on room occupancy.

63. Smart Energy Meter with Remote Monitoring – Tracks energy consumption and allows remote billing.
64. AI-Powered Smart Home Assistant – Uses speech recognition to control various home appliances.
65. Warehouse Inventory Management System – Uses RFID and Raspberry Pi to track inventory movement.
66. Automated Parking System – Uses IoT to detect available parking spaces and guides vehicles accordingly.
67. Factory Energy Optimization System – Uses AI and IoT to monitor and optimize energy consumption in industries.
68. Advanced Project Idea: AI-integrated smart city model with automated streetlights, traffic control

Health & Medical Projects

69. IoT-Based Patient Health Monitoring System – Tracks heart rate, temperature, and blood pressure remotely.
70. AI-Based Disease Prediction System – Uses machine learning to analyze patient data for disease prediction.
71. Smart Wearable for Elderly Monitoring – Detects falls and sends emergency alerts.
72. Non-Contact Temperature Scanner Using Arduino – Uses infrared sensors to measure body temperature.
73. AI-Powered Smart Prosthetic Arm – A robotic arm controlled using muscle signals.
74. Smart Pill Dispenser – Dispenses medicines at scheduled times and alerts the patient.
75. IoT-Based Asthma Prediction System – Monitors air quality and predicts asthma attacks.
76. Bluetooth-Based Wheelchair Control System – Allows patients to control wheelchairs using a smartphone.
77. Advanced Project Idea: AI-powered early cancer detection system using Raspberry Pi and image processing.
78. Arduino-Based Wind Turbine Monitoring System – Tracks wind speed and power generation using sensors.
79. Solar-Powered Water Pump with IoT Monitoring – Automates water pumping based on sunlight intensity.
80. Heat Waste Energy Recovery System – Converts waste heat into electricity using Peltier modules and Arduino.
81. Piezoelectric Energy Harvesting from Footsteps – Generates power when people walk over pressure-sensitive tiles.
82. Automatic Solar Panel Cleaning System – Uses a robotic arm to clean solar panels for maximum efficiency.
83. Hydropower Generation System with IoT – Uses Arduino to monitor and optimize water-based power generation.

84. Advanced Project Idea: AI-integrated renewable energy grid balancing system using Arduino and IoT.

Smart Industrial & Automation Systems

85. Automated Conveyor Belt System with Sorting – Uses Arduino and IR sensors to categorize items on a conveyor belt.
86. CNC Machine Control Using Arduino – Controls a CNC router for precision cutting and engraving.
87. Industrial Boiler Automation System – Monitors and controls temperature and pressure for optimized performance.
88. Smart Welding Robot – Uses Arduino to automate welding based on programmed patterns.
89. Automatic Packaging Machine Using Arduino – A robotic system for packing and sealing products.
90. Robotic Material Handling System – An Arduino-controlled robotic arm for lifting and placing heavy loads.
91. Advanced Project Idea: AI-powered predictive maintenance system for industrial machinery.

Mechanical Robotics Projects

92. Self-Balancing Two-Wheel Robot – Uses gyroscopes and Arduino to maintain balance while moving.
93. Arduino-Based Robotic Arm for Industrial Automation – A pick-and-place robotic arm controlled using servo motors.
94. Fire fighting Robot with Temperature Sensors – Detects and extinguishes fires in industrial environments.
95. Autonomous Wall Climbing Robot – Uses vacuum suction and motors to climb vertical surfaces.
96. Voice-Controlled Exoskeleton for Disabled Persons – A wearable robotic suit controlled by voice commands.
97. Arduino-Powered Quadruped Robot – A four-legged robotic system for rough terrain navigation.
98. Advanced Project Idea: AI-powered autonomous robotic assistant for industrial and construction tasks.

Automotive & Vehicle Automation

99. Regenerative Braking System for Electric Vehicles – Uses Arduino to capture braking energy and convert it into usable power.
100. Smart Traffic Management System Using Arduino & IoT – Adjusts traffic signals based on real-time vehicle density.
101. Automatic Car Parking System – Uses ultrasonic sensors and Arduino to detect available parking spaces.
102. Hybrid Electric Bike with Solar Charging – Uses Arduino to manage battery charging and energy distribution.

103. Smart Helmet with Accident Detection – Detects accidents and sends emergency alerts using GPS & GSM.
104. Arduino-Based Adaptive Cruise Control System – Adjusts vehicle speed based on real-time traffic conditions.
105. Advanced Project Idea: AI-powered self-driving vehicle prototype using Arduino and Raspberry Pi.