## AREAS OF INTEREST IN ELECTRICAL ENGINEERING

1. **Activation, Troubleshooting and Maintenance**
2. Surface mount technology (SMT) assembly
3. Analyzing and checking devices and assemblies
4. Electronics repair and fault finding
5. **Internet of Things**
6. Hardware for the Internet of Things
7. Improving practical skills by controlling electrical devices remotely over a wireless network
8. Using the platform for lighting management and measuring current power consumption at home appliances
9. **Computer embedded systems**
10. Ways of connecting microcontrollers to the physical world
11. Connection of the microprocessor interface with conventional electronic circuits
12. Use interface features for digital input and output signals
13. Examine sampling principles
14. Create simple program slots for receiving input values, performing simple management tasks, and performing outbound operations
15. Demonstrate how to measure time and generate time signals
16. Compare the difference between direct programming of the microcontroller (without OS and programming by using OS's for real-time operation RTOS)
17. Analyze a simple URS
18. Define and describe the characteristics and application of sensors
19. Analyze executive elements
20. Analyze display elements
21. Define and describe the control system using microcontrollers
22. **Automatic Process Control**
23. Adopt basic knowledge of the structure and mode of operation of the regulator
24. Adopt the basic theoretical knowledge of automated control circuits
25. Understand the principles of performance measurement systems and automated process management
26. Know the performance and the ways in which devices and systems for remote measurement and control are operated
27. Provide basic practical knowledge of measurements of process and other nonelectric sizes
28. Apply the basic practical knowledge of automatic control circuits
29. Connect, test, approve and enable simpler metering devices and automatic control devices
30. **Digital Electronics Circuits**
31. Construct and test DAC using IC and R-2R ladder weighted resistor
32. Construct and test astable and monostable circuits using IC 555
33. Construct the adder using IC
34. Construct a 3 to 8 Decoder/ Demux using IC
35. Construct the adder using IC
36. Construct a priority Encoder using IC
37. Construct a 8 to 1 Multiplexer using IC
38. Construct SIPO and PIPO using IC
39. Construct and test ALU IC
40. Constructs a decade counter using IC
41. Construct a binary counter using IC
42. Construct a Modulus (MOD-12) counter
43. Construct a tri state buffer using suitable IC
44. Prepare simple digital electronic circuits using the software
45. Simulate and test the prepared digital circuits
46. Convert the prepared circuit into a layout diagram
47. Explore various troubleshooting and fault-finding resources provided in the simulation software

## Training through:

* Practical Exercises
* Practical Work
* Demonstrations and Presentations