

Topics in Electrical Engineering for the Assistant Professor (Contract) under the NPIU scheme

1. Time-domain and frequency domain analyses of electric circuits, two port network analysis
2. Power systems stability, non-linear swing equations
3. Controllability and observability of power system dynamics
4. Switched electrical networks, DC to Dc converters, rectifiers and inverters
5. Maxwell's equations in electromagnetics
6. Induction, BLDC and PMSM motors and their control methods
7. Architecture of 32-bit microcontrollers and embedded C programming
8. Controller designs using the transfer function and state space approaches
9. PID controller tuning methods
10. Transducers and actuators, signal conditioning circuits