

Electronic circuits design classes:

(good idea is when the subject can be considered as an introduction to the master thesis).

Main essence is to combine analog circuit and μ P system

1. Any topic suggested by student – should include “analog” circuit - interface between analog environment and μ C system; It's a good idea when the project is part of your master's thesis!

2. „Ball & Beam” – PID controller example
3. AC motor driver (idea of lab stand)
4. DC motor control using optic/magnetic encoder
5. High/medium power DC motor controller with encoder
6. speed and torque regulator of universal motor
7. speed and torque regulator of PMDC motor
8. Lab voltage/current controller with AD/DA converters
9. Bio-signals acquisition with ADS1299 (can be extended as master thesis; evaluation board available)
10. High/medium power DC motor controller with torque control
11. Voice recording and playback system with STM32 (not ISD1820)
12. Voice recognition using STM32 series processor
13. hand prosthesis, flexion angle sensor,
14. hand prosthesis, touch sensor (pressure force)
15. hand prosthesis, haptic actuators
16. illumination meter
17. multichannel AD converter with I2C interface
18. Dust monitor (PM2.5 - GP2Y1010AU0F vs PMS1003, μ P system)
19. Air flow regulator (differential pressure sensor + fan control circuit)
20. Flex and force sensors (resistance/voltage converter, μ P system)
21. USB-RS232 interface with galvanic optical isolation,
22. Strain gauge (analog interface, μ P system)
23. Oxygen saturation sensor (analog interface, μ P system)
24. ECG sensor (analog interface, μ P system)
25. Hazardous gazes sensor TGS6810 (analog interface, μ P system)
26. Gas sensor TGS8100 (analog interface, μ P system)
27. Gas sensor TGS3870 (analog interface, μ P system)
28. Gas sensor TGS2600 (analog interface, μ P system)
29. Gas sensor TGS813 (analog interface, μ P system)
30. VOC (volatile organic compound) sensor SGP30
31. VOC (volatile organic compound) sensor SBME689