Mechatronic

Programma

-Engineering mechanics;
Direct coupling motor-load. Characteristic curves. Motor steady state. Mechanical transient. Stability.
-Computer science;
Boole's Algebra. De Morgan's theorem.
Logic gates AND, OR, NOT; gates NAND, NOR, XOR;
Combinatory logic elements. Multiplexer. Decoder.
Memory elements: FlipFlop R,S; FlipFlop J,K; FlipFlop D;
FlipFlop T; Counters.
- Electric motors:
Asynchronous motor. DC motor with independent excitation.
Power electronics:
Rectifier. A.C. Converters. A.C./D.C. Inverters. D.C. Converters.
Controlled rectifiers.
- Regulated electric motors:
Asynchronous motor: field regulated voltage control and frequency control.
D.C. Motor: field current control and rotor current control.
Stepper motor.
Linear motor.
Proportional regulation, Integrative regulation, Derivative regulation. PID regulation.

Attività d'esercitazione

Exercises in Mechatronic Labs. (Building N. 6)

Testi consigliati

Lectures text by the lecturer.