

## **Integrated Circuit Design**

The MOS transistor: operation principles, basic I-V curves, weak signal models for low, medium and high frequencies of operation

Basic principles of physical designing (layout) microelectronic circuits, in silicon technology, with emphasis in analog design.

Voltage circuits: voltage shift, voltage divider, current mirrors, band gap reference generators (supplies)

Basic amplification MOS-devices: inverter, difference amplifier, follow-up source.

Operational amplifiers design: one- and two-stage amplifiers, dc and ac analysis, noise analysis, high-signal analysis

MOS switches, sampling devices, A/D and D/A converters.

Design tools: from HSPICE to Cadence.