Integrated Circuits Design

Objective: During the four days training the participants are taught the basics of CMOS integrated circuits design. After reviewing the MOS device physics, the design flow will be cover with the help of equation analysis and CAD simulations.

Day 1 - Introduction

1. MOS Device Physics
2. Single-stage amplifiers
3. SPICE Tutorial
    a. MOSFET I/V characteristics
    b. Common-source stage: DC, AC and Transient analysis

Day 2 - Basic Digital Design

1. Inverter
2. CAD tutorial: Pre-layout simulations
3. CAD tutorial: Layout
4. CAD tutorial: Post-layout simulations

Day 3 - Analog Design I

1. Differential amplifiers
2. CAD tutorial: Differential pair design
3. CAD tutorial: Mismatch and PVT variations

Day 4 – Analog Design II: Layout

1. Layout principles
2. CAD tutorial: Differential pair layout
3. CAD tutorial: Differential pair

Notes:

Program subject to minor changes.