ELEC6230 VLSI Systems Design

A Practical Course in VLSI Design

Taught by
  • Iain McNally

Teaching
  • Regular lab sessions to introduce CAD tools and techniques
    + lectures to introduce theory and design exercises

Assessment
  • 100% Coursework - 4 Design Exercises:
    1. Simple cell design and layout with performance optimisation
    2. Digital system design (HDL model only)
    3. Cell library design and layout (team exercise)
    4. System design combining HDL model and cell based layout
• Layout for VLSI
  Cell layout, Standard cell layout, Full and semi-custom design, Floorplanning, Bit slice design.

• Digital design using SystemVerilog
  Introduction to SystemVerilog, Design for Synthesis.

• CAD Tools & Techniques
  Magic VLSI layout editor, HSpice analogue circuit simulator, SystemVerilog Hardware Description Language and digital simulator, Cadence IC design toolset.

For more details see:
http://users.ecs.soton.ac.uk/bim/notes/vlsi
Part II

**D2  IC Design Exercise**
Simple Digital System Design using "Black Box" Standard Cells

Part III

**ELEC3221 Digital IC & Systems Design**
An Introduction to VLSI Design in CMOS

Part IV

**ELEC6230 VLSI Systems Design**
Lots of hands–on CAD

**ELEC6231 VLSI Design Project**
Complex System Design
Complete Custom IC Design Flow

ELEC6231 Novel 16–bit Microprocessor
(The best design from each year is fabricated)