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

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Part III

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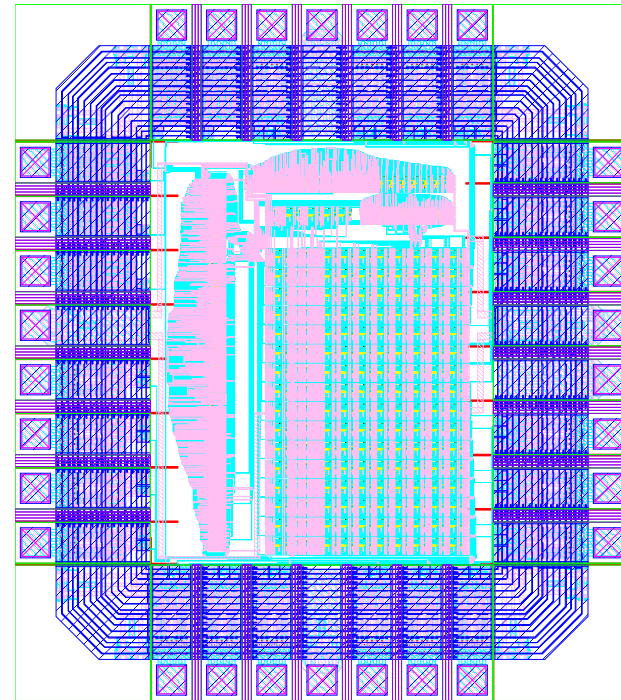
An Introduction to VLSI Design in CMOS

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)