

ELEC3221 Digital IC & Systems Design

Content

- Includes an introduction to VLSI Design in CMOS

Taught by

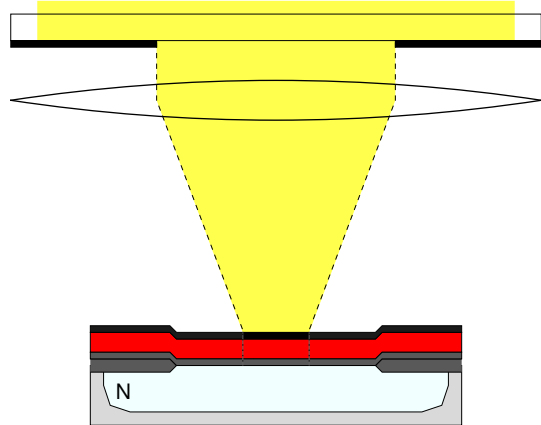
- Iain McNally
- Koushik Maharatna
- Basel Halak

Assessment

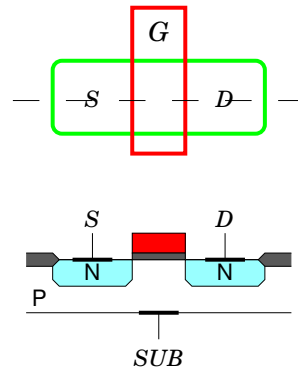
- | | |
|---------------|-----|
| • Examination | 90% |
| • Coursework | 10% |

L-Edit Logic Gate Design and Layout

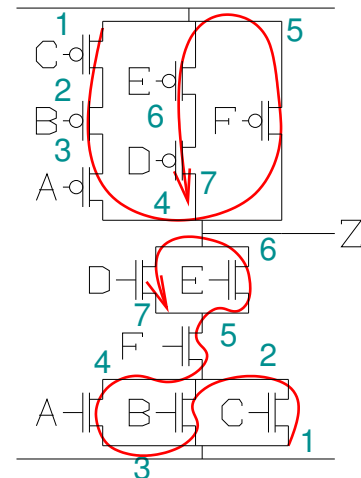
Processing



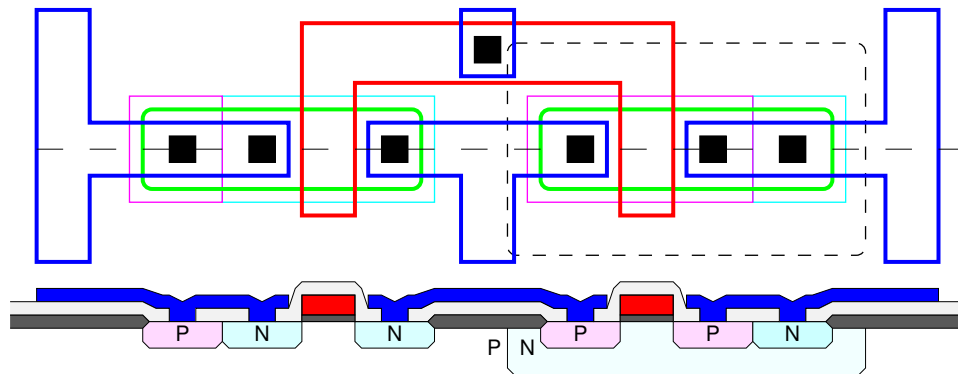
Transistor Construction



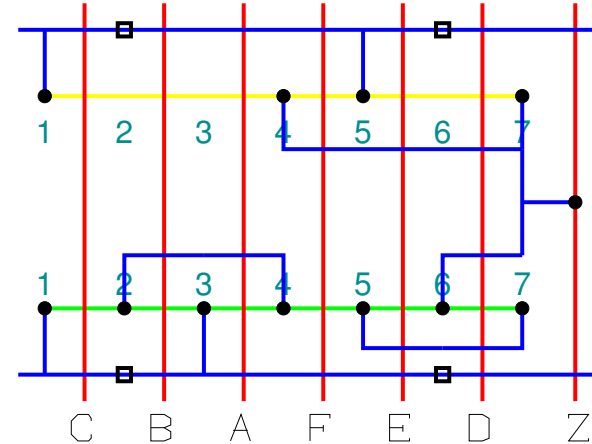
Euler Path Design



Mask Level Circuit Design

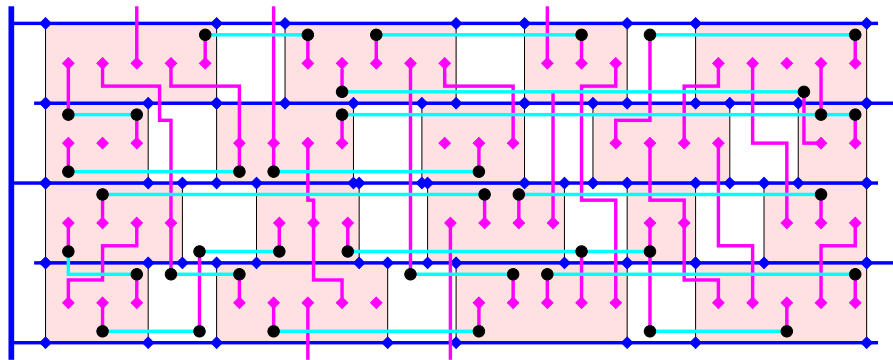


Stick Diagram Layout

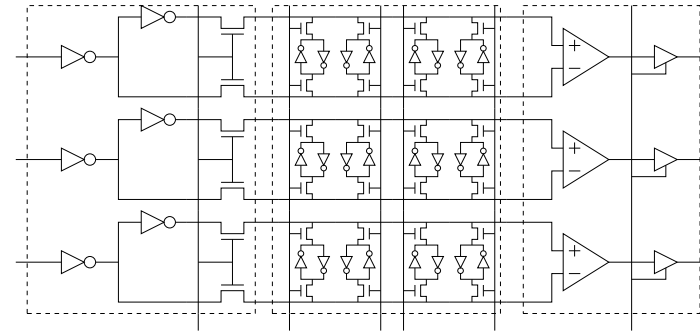


ELEC3221 Digital IC & Systems Design Iain McNally

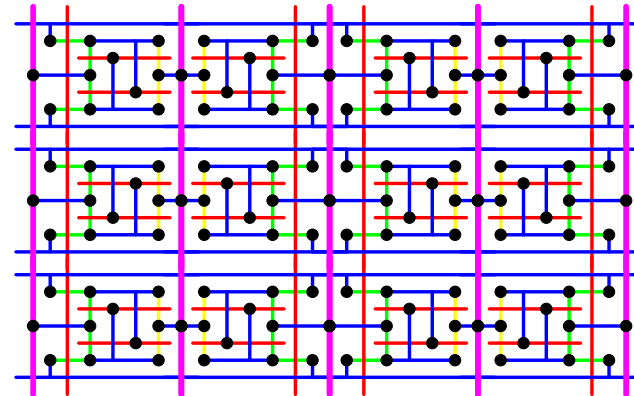
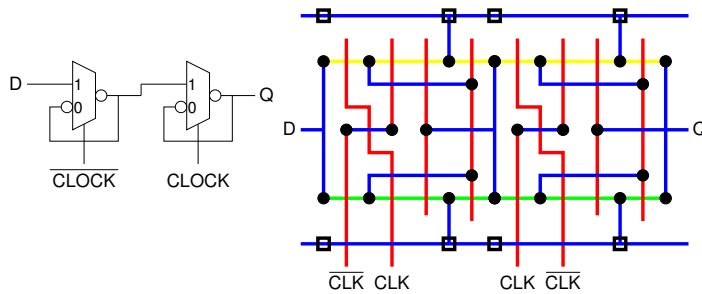
System Design using Standard Cells



Structured Macros



Static CMOS Circuits



For more details see:

<http://users.ecs.soton.ac.uk/bim/notes/icd>

ELEC3221
Maharatna

Digital IC & Systems Design

Koushik

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ELEC3221 Digital IC & Systems Design Where Next?

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

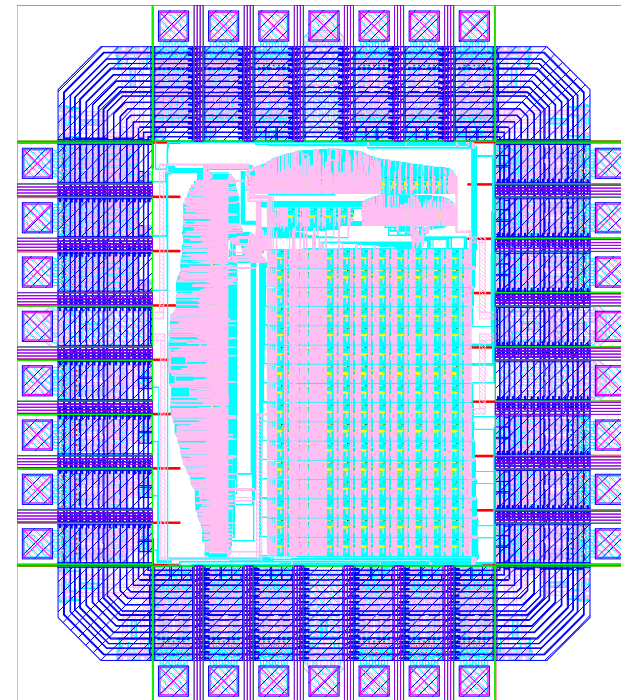
Part IV

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)