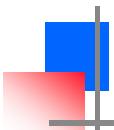


# Analog CMOS IC Layout

Lecturer : Poki Chen



## Analog Integrated Circuit Design & Layout



- Tutors: Prof. Poki Chen
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- Website: <http://homepage.ntust.edu.tw/poki/>
- Major: Analog / Mixed-Mode IC Design & Layout
- References
  - Internet Surfing Information
  - Alan Hastings, "**The Art of Analog Layout**," 2<sup>nd</sup> Ed., Prentice Hall ,2005
  - Hong-Yi Huang, Lecture Notes for "Analog Integrated Circuits Design and Layout," Mixed Signal Consortium, MOE, Taiwan
  - Behzad Razavi, "**Design of Analog CMOS Integrated Circuits**," International Edition 2001.
  - Philip E. Allen, "**CMOS Analog Circuit Design**," 2<sup>nd</sup> Ed., Oxford University Press, 2002
- Course Assessment:
  - 50% LABs
  - 50% Final Project/Report



# Contents

- Introduction to Analog Design
- Manufacturing Process
- Mismatch vs Strategies
- Failure Mechanisms
- Layout of MOS Transistor
- Cadence, Calibre, HSPICE, and LABs
- Case study of High Accuracy MOS Layout
- The Wire
- Layout of Resistor
- Yield Consideration and Layout Optimization
- Layout of Capacitor
- Layout of Inductor
- ESD Layout
- Final Project



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Analog IC Layout

Introduction-3

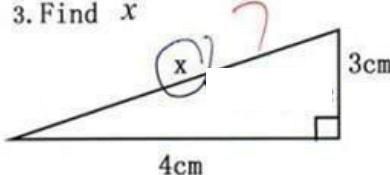
## Final Test?

$$1. \frac{\sin 2x}{2x \cos x}$$

$$2. \text{已知 } \lim_{x \rightarrow 8} \frac{1}{x - 8} = \infty$$

$$\text{求 } \lim_{x \rightarrow 5} \frac{1}{x - 5} =$$

3. Find  $x$



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Analog IC Layout

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