

The Hong Kong University of Science and Technology

UG Course Syllabus

Practical Considerations of Analog Integrated Circuit Design

ELEC40100

Credits: 3

Prerequisite(s): ELEC 3400

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Course Description

Properties of MOSFET are a strong function of its width and length due to short-channel effects. Even two MOSFETs with the same width and the same length, their properties are not identical due to process variations and various non-ideal effects such as layout dependent effects (LDEs) and parasitic elements in CMOS technology. In this course, students will learn about how the above mentioned effects affect analog circuit performance, and what kinds of methodologies can be used to minimize their impacts.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Laboratory	30%
Individual Project	40%
Final examination	30%

Required Texts and Materials

Lecture notes will be available on the course webpage.

Additional Resources

[Alan Hastings, *The Art of Analog Layout \(2nd edition\)*, Pearson Prentice Hall, 2006](#)

[Short Course from Prof. PE Allen](#)

[gm/id note from Prof. Bernhard Boser](#)