EE-532 Integrated circuits technology
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Summary
This course will give an overview of some of the most relevant aspects of CMOS technology used to design and fabricate integrated circuits. Current research and challenges brought about by shrinking Field Effect Transistors down to the nm scale will also be tackled.

Content
• Introduction & Basics of integration technology
• Cleaning processes
• Thermal treatments
• Implantation
• Semiconductor Film growth
• Lithography
• Etching processes
• Metallization
• Process Integration
• Advanced multigate nano scale FET architectures.

Keywords
Silicon
CMOS
MOSFET
SOI
Implantation
Etching
Annealing
isolation
oxide

Learning Prerequisites
Important concepts to start the course
No prequisite is needed, however very basic knowledge about MOSFET principles is welcome.

Learning Outcomes
By the end of the course, the student must be able to:
• Synthesize informations on technology processes
• Classify technological steps to fabricate an IC
• Visualize the process flow

Transversal skills
• Set objectives and design an action plan to reach those objectives.

Teaching methods
Class lectures.
Correction of exercises left for homework.

Expected student activities
Some training exercises.

Assessment methods
Written examination without documents:
Balance between question on the course content and exercises

Supervision
Office hours Yes
Assistants No
Forum No