NE203 Aug 3:0

Advanced Micro and Nano fabrication technology and process

Instructor

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Department: Centre for Nano Science and Engineering

Course Time: Tue, Thu 11:30AM

Lecture venue:

Detailed Course Page: https://sites.google.com/site/ne203amnf/home

Announcements

Brief description of the course

The main object of the course is to introduce technology and processes that are used in fabricating advanced electronic devices and circuits. The primary focus is on the unit process technology.

Prerequisites

None

Syllabus

All areas of micro and nanofabrication device processing, including substrates, cleaning, native films growth, chemical vapor deposition, atomic layer deposition, physical vapor deposition, metallization, optical lithography, electron lithography, wet-etch, dry-etch, chemical mechanical polishing and packaging

Course outcomes

A thorough understanding of the various unit-processes in micro/nano fabrication. Focus is on fundamental understanding but practical details are also covered.

Grading policy

Mid-Term 20%

End-Term 20%

Assignments 20%

Surprise Quiz 10%

Final Project (group of 3-4 studets) 20%

Class Participation 10%

Assignments

Around 6-7 assignments given out every few weeks. Assignments are designed to be challenging and though provoking.

Resources

1. Stephen A. Campbell, The Science and Engineering of Microelectronic Fabrication
2. Richard C.Jaeger Introduction To Microelectronic Fabrication
3. Prof. Dr. Helmut FÃ¶ll Electronic Materials http://www.tf.uni-kiel.de/matwis/amat/elmat_en/index.html
3. Milton Ohring Materials Science of Thin Films
http://www.sciencedirect.com/science/book/9780125249751
5. Chris Mack Fundamental Principles of Optical Lithography