

# Advanced Semiconductor Devices (ET4 296)

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## Lecture schedule

Mo	4 February 2008	Lecture
Th	7 February 2008	Instruction
Mo	11 February 2008	Lecture
Th	14 February 2008	Instruction
Mo	18 February 2008	Lecture
Th	21 February 2008	Instruction
Mo	25 February 2008	Lecture
Th	28 February 2008	Instruction
Mo	3 March 2008	Lecture
Th	6 March 2008	Instruction
Mo	10 March 2008	Lecture
Th	13 March 2008	Cancelled
Mo	17 March 2008	Lecture
Th	20 March 2008	Instruction

Lectures on Mondays: 3:45pm – 5:30pm lecture hall C

Instructions on Thursdays: 3:45pm – 5:30pm lecture hall C

## Background knowledge

- Solid-state physics for semiconductors (Neamen: chapter 1 to 5)
- Continuity equation of ambipolar transport equation (Neamen: chapter 6)
- Physics of devices based on p-n junctions (Neamen: chapter 7, 8, and 10)
- Physics of 'metal'-semiconductor junction (Neamen: chapter 9)
- Physics of field-effect devices (Neamen: chapter 11)

⇒ Applets available via the link on Blackboard

⇒ Examination on Wednesday 2 April 2008 (i.e.,  
subscribe via TAS before 19 March 2008!!!)

⇒ Second examination 27 August 2008

## Examination Advanced Semiconductor Devices (ET4 296)

- Wednesday 2 April 2008, 2pm – 5pm
- Subscribe via TAS (Tentamen Aanmeld Systeem) **before** 19 March 2008
- Second examination Wednesday 27 August 2008, 2pm – 5pm
- Subscribe via TAS **before** 13 August 2008
- Also examination for Semiconductor Components and Technology (ET4 249).
- Open-book test
  - Book and lecture notes may be used
  - Answers to old tests may **NOT** be used

## Course contents

- MOS basics
- MOS non idealities and additional concepts
- *CMOS*
- Heterojunctions
- Heterojunction Bipolar Transistor (HBT)
- Optical Devices