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Course profile

Summer 2021

Course Code: VE320

Course Name: Introduction to Semiconductor Devices

Course Credits: 4.0

Course Category: Required

Degree Program: General Courses for ECE Degree Programs

Classroom: Monday A515, Wednesday A100, Friday D115 (odd weeks) & online  
(Feishu)

Prerequisites: Ve215, Vp240 (or Vp260)

Lecture time: Monday 10:00-11:40; Wednesday 10:00-11:40; Friday 10:00-11:40 (odd weeks)

Instructor:

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Office Hours: Monday, Wednesday and Friday (odd weeks) 9:00-9:50

Teaching Assistants:

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### Textbook:

- 1: “Semiconductor Physics and Devices: Basic Principles”, 4th ed., Donald A. Neamen, Publishing house of electronic industry

### Course Description:

Introduction to semiconductors in terms of atomic bonding and electron energy bands.

Equilibrium statistics of electrons and holes. Carrier dynamics; continuity, drift, and diffusion currents; generation and recombination processes, including important optical processes.

Introduction to: PN junctions, metal-semiconductor junctions, bipolar junction transistors, junction and MOSFETs.

