COURSE DETAIL

DEVICE PARAMETER EXTRACTION & LAYOUT IMPLEMENTATION
Country Singapore
Host Institution Nanyang Technological University
Program(s) Nanyang Technological University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Electrical Engineering
UCEAP Course Number 160
UCEAP Course Suffix
UCEAP Official Title DEVICE PARAMETER EXTRACTION & LAYOUT IMPLEMENTATION
UCEAP Transcript Title DVCE PARAMETER EXTR
UCEAP Quarter Units 4.50
UCEAP Semester Units 3.00

Course Description

This course focuses on the computer-aided design of semiconductor devices and integrated circuits. In the first part, students learn circuit simulation using the MOS transistor model and explore the impact of mask layout design on circuit performance. The process from simplified Boolean expression to actual circuit layout is taught. In the second part, students learn virtual device characterization using device simulator software to obtain the current-voltage characteristics of a MOS transistor. The third part examines the extraction techniques of transistor parameters such as the threshold voltage. The course requires students to take prerequisites.

Language(s) of Instruction
English

Host Institution Course Number
EE4624

Host Institution Course Title
DEVICE PARAMETER EXTRACTION & LAYOUT IMPLEMENTATION

Host Institution Course Details
https://wis.ntu.edu.sg/webexe/owa/aus_subj_cont.main

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
School of Electrical and Electronic Engineering

Course Last Reviewed
2025-2026

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