

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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