COURSE DETAIL

POWER ELECTRONICS

Country
Korea, South

Host Institution
Yonsei University

Program(s)
Yonsei University

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Electrical Engineering

UCEAP Course Number
107

UCEAP Course Suffix

UCEAP Official Title
POWER ELECTRONICS

UCEAP Transcript Title
POWER ELECTRONICS

UCEAP Quarter Units
4.50

UCEAP Semester Units
3.00

Course Description

This class provides fundamental understanding of energy conversion by use of power electronic devices. Students are expected to perform analysis and synthesis of power electronic systems after this course. Expected outcome includes: 1. Demonstrate the ability to analyze switching power converters in steady state using circuit averaging and determine DC voltages and currents 2. Be able to sketch current and voltage waveforms in a converter in steady state 3. Demonstrate the ability to size passive filtering components in converters such as inductors and capacitors to obtain a desired ripple performance 4. Demonstrate the ability to derive small-signal linearized models for switching converters 5. Demonstrate an understanding of the effects of negative feedback on converter operation 6. Demonstrate the ability to simulate switching converter using both switching models and averaged models via PSCPICE.

Prerequisite: EEE2010 (Basic Circuit Theory)

Language(s) of Instruction
English

Host Institution Course Number
EEE3350

Host Institution Course Title
POWER ELECTRONICS

Host Institution Course Details

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Course Last Reviewed

2024-2025

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