

## 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 PSCICE.

Prerequisite: EEE2010 (Basic Circuit Theory)

### Language(s) of Instruction

English

### Host Institution Course Number

EEE3350

### Host Institution Course Title

POWER ELECTRONICS

### Host Institution Campus

### Host Institution Faculty

### Host Institution Degree

### Host Institution Department

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