# COURSE DETAIL

| OPTOELECTRONICS AND PHOTONICS |
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| **Country**<br>Korea, South |
| **Host Institution**<br>Yonsei University |
| **Program(s)**<br>Yonsei University |
| **UCEAP Course Level**<br>Upper Division |
| **UCEAP Subject Area(s)**<br>Electrical Engineering |
| **UCEAP Course Number**<br>115 |
| **UCEAP Course Suffix** |
| **UCEAP Official Title**<br>OPTOELECTRONICS AND PHOTONICS |
| **UCEAP Transcript Title**<br>OPTOELEC&PHOTONICS |
| **UCEAP Quarter Units**<br>4.50 |
| **UCEAP Semester Units**<br>3.00 |

**Course Description**

This course explores the basics of opto-electronics and photonics, which has many applications areas in information and communication technologies. By the end of the semester, students should have basic knowledge of (1) what light is, (2) how the basic property of light can be modeled, and (3) how light can be used for various applications. Topics include basics of electromagnetism, maxwell's equations, plane-wave solutions, polarization, EM waves in conductor, total internal reflection, interference, light incident on conductors, light incident on dielectric interface, multiple dielectric interface, interferometers, diffraction, metallic waveguides, dielectric waveguides, 2-D dielectric waveguides, optical fiber, waveguide devices, photons, interaction between light and matter, optical amplifiers, semiconductors, semiconductor lasers, single mode lasers, and photodetectors.

Prerequisite: Basic knowledge in electromagnetism

**Language(s) of Instruction**
English

**Host Institution Course Number**
EEE3150

**Host Institution Course Title**
OPTOELECTRONICS AND PHOTONICS

**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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