COURSE	Name	: Optoelectronic Devices
	Code	: EE184941
	Credits	: 3
	Semester	: VIII (Elective)

Description of Course

The course of Optoelectronic Device discusses: The Properties of Light including Polarization, Interference, Diffraction, Light Spectrum, and Monochromator; Modulation of Light; Display Devices including Light Emitting Diode, Plasma Display, Liquid Crystal Display; Lasers including Laser Stimulation Techniques, Q-Switching; Photodetectors including Photocathode, UVTRON, Photomultiplier, Photoconductive, Photodiode, Photovoltaic, Charge-coupled Device; Optical Fibers including Fiber Dispersions, Multimode Step-index Fibers, Inter-modal Dispersion, Single-mode Fiber, Graded-index Fiber, Material Dispersion, Fiber Losses, Optical Time-Domain Reflector; Integrated Optics including Waveguide Fabrication, Directional Coupler, Splitter, Wavelength Multiplexer, Interferometric Filter, Optical Switch, Optical Amplifier; Optical Communication System; Applications of Optoelectronic Devices.

Learning Outcomes

Knowledge

(P03) Mastering the concepts and principles of design procedure in power systems, control systems, multimedia telecommunications, or electronics.

Specific Skill

(KK02) Able to describe the completion of engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

General Skill

(KU01) Able to apply logical, critical, systematic and innovative thinking in the context of development or implementation of science and technology that concerns and implements the value of humanities in accordance with their area of expertise **.**

Attitude

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently.

Course Learning Outcomes

Knowledge

Mastering the concepts, principles ofdesign procedure for optoelectronic device technology systems and its applications in telecommunications or electronics.

Specific Skill

Able to describe the analysis, simulation, design, and application of optoelectronic devices.

General Skill

Able to apply the analysis, simulation, design, and application of optoelectronic devices.

Attitude

Demonstrating attitude of responsibility regarding the analysis, simulation, design, and application of optoelectronic devices independently.

Main Subjects

1. The Properties of Light
2. Modulation of Light
3. Display Devices
4. Lasers
5. Photodetectors
6. Optical Fibers
7. Integrated Optics
8. Optical Communication System
9. Applications of Optoelectronic Devices

Reference(s)

[1] Muhammad Rivai, 2018. Lecture Note: Optoelectronic Devices
[2] S.O. Kasap, 2012. Optoelectronics & Photonics: Principles & Practices, Prentice Hall

Prerequisite(s)

EE184303 Electromagnetic Field