COURSE	Name	: Optoelectronics and Laser Technology
	Code	: EE185543
	Credit(s)	: 2
	Semester	: (Elective Course)

Description of Course

The course of Optoelectronics and Laser Technology 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 Optoelectronics and Laser Technology.

Learning Outcomes

Knowledge

(P02) Mastering engineering concepts and principles to develop the necessary procedures and strategies for systems analysis and design in the areas of power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

Specific Skill

(KK02) Being able to compose problem solving in engineering through depth and breadth of knowledge which adapts to changes in science and technology in power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

General Skill

(KU07) Being able to improve the capacity of learning independently.

Attitude

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

Course Learning Outcomes

Knowledge

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

Specific Skill

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

General Skill

Being 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 Optoelectronics and Laser Technology
Reference(s)
[1] Muhammad Rivai, 2018. Diktat: Opto-Elektronika dan Teknologi Laser. [2] S.O. Kasap, Optoelectronics & Photonics: Principles & Practices, Prentice Hall, 2012.
Prerequisite(s)
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