



Sample Brief Course Description

Course title	Optical Electronics for REE
Course code	ECE 453
College	Engineering
Department / Program	Electrical Engineering/Renewable Energy
Year/ Level	4/8
Course Type	A. <input type="checkbox"/> University <input type="checkbox"/> College <input checked="" type="checkbox"/> Department <input type="checkbox"/> Others b. <input type="checkbox"/> Required <input checked="" type="checkbox"/> Elective
Credited Hours	3
Contact Hours	(LT:3, LB:0, TR:0)
Pre-requisites (if any)	ECE 351
Co-requisites (if any)	---
Course description	Fundamentals of optical signals and modern optical devices and systems. Optical systems sources (e.g., lasers and light-emitting diodes), light modulation components (e.g., liquid-crystal light modulators), transmission media (e.g., free space or fibers), photodetectors (e.g., photodiodes, photomultiplier tubes), information storage devices (e.g., optical disk), processing systems (e.g spatial filtering systems) and displays



Course Main Objectives	<ol style="list-style-type: none">1. Understanding basic laws and phenomena in Optoelectronics and Lasers.2. To learn the generation, propagation, and detection of optical electromagnetic waves.
Learning Outcomes	Knowledge <ol style="list-style-type: none">1. Understand the fundamental properties of light and operation principles of basic optical components2. Explain the Optical sources, detectors, and storage devices with their principle3. Describe the development and application of optoelectronic system4. Recognize and classify the structures of Optical fiber and types.
	Skill <ol style="list-style-type: none">1. Classify different modulators in optical system and their effects2. Conduct experiments and measurements in laboratory and on real components, devices, and equipment of optoelectronic systems3. Demonstrate mastery of basic mechanisms of light generation (LED, LASER) through detailed understanding and analysis of operation principles, characteristics, Quantum efficiency of semiconductor lasers.4. Discuss the channel impairments like attenuation caused by passive components such as cable, splices, and connectors
	Values <p>Support to take part in teamwork and be able to independently present various professional materials</p>