

Course Introduction

Welcome! Photonics is the study of photons, and photons are everywhere! Visible light we see reflecting off of objects is made of photons. Photons are quanta or packets of energy, light energy, that when generated travel out in straight lines until manipulated by natural or man-made optics. Light is used in medicine to help us maintain a higher standard of health, the military to detect and protect us from our enemies, the commercial arena too sell our products, and entertainment to amaze us. The use of laser light, light emitting diodes, fiber optics, optical systems, etc. is spreading across all technologies and sciences. Therefore, you must have a good light based foundation which includes a solid understanding of the nature and properties of light.

This course will introduce you to the basics of how light travels and several behaviors of light when light interacts with materials, such as: Refraction, Scattering, Absorption, Reflection, and Transmission. In addition, this course introduces the student to how to handle and clean optics, laser safety, how optics manipulate light, how light behaves as a particle and a wave, and the basics of how a laser operates.

I hope that you will enjoy this class, and are ready to learn all you can! Let's get started!