Al-Mustaqbal University College

Medical Physics Department

Lecture 2 / Optics. Second Stage

Dr. Aiyah Sabah Noori
M.Sc Halah Mohammed
2022-2023

(Lecture 2)

Lecture outline

Geometric optics
Optical Path of light in optical medium
Fermat principle

Geometric optics, or ray optics, refers to a model of optics that in terms of rays describes light propagation. Furthermore, the ray in geometric optics is an abstraction useful for approximating the paths along which the propagation of light takes place under certain circumstances. The concept of geometric optics should not be confused with the concept of physical optics, which studies the phenomena for which geometric optics is not valid .like (there is no account for some optical effects like interference and diffraction)

Optical Path

Optical Path: To derive one of the most fundamental principles in geometric optics, it is appropriate to define a quantity called the optical path. The path d of a ray of light in any medium is given by the product velocity times time: