

How We Visualize Our Reality

1 Hour ABO
Technical Level II

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Intended for experienced opticians with a basic understanding of optics.

Course Description

In this course we will discuss how light is both a wave and a particle. We will recall how the visual system works and how light provides sight. We will explore popular optical illusions to demonstrate how we see with our brains, not with our eyes.

Course Objectives

- Describe how light acts as both a wave and a particle.
- Explain the complete visual system.
- Utilize optical illusions to demonstrate how we see.

Course Outline

- Introduction (5 min)
 - o Course Objectives
- Define light and how it behaves (10 min)
 - o Light as a wave
 - o Light as a particle
 - o Discuss the entire light spectrum
- The visual system (10 min)
 - o Basic anatomy of the eye

- o The journey of light to the brain
 - o The brain utilizes patterns to create vision
- Optical Illusions (25 min)
 - o Black/blue or white/gold dress
 - Explain how our eyes see color
 - Rods and Cones
 - Ishihara Test
 - Color blindness
 - o Crooked Lines
 - Explain peripheral vision
 - o Strobe Light Kitten Experiment
 - Explain the results
 - Motion blindness
 - o The Renshaw Cow
 - Our brain uses previous information to develop sight

- We see with our brain, not with our eyes

- o The 3D Square and Circle

- Remind everyone that our perspective is our reality

- Closing Summary & Questions (5 min)