

Course Title: *Principles of Visual Assessment for Opticians and Technicians*

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Course Length: Two hours

Course Description: This course will introduce the participant to the principles of a visual assessment to include refraction, describing information gathered/history taking and the workflow process. Topics covered will include definitions, A&P, refractive errors, instrumentation, visual acuity, objective and subjective findings and binocular balancing.

Learning Outcomes: At the completion of this course the participant should:

- Understand the connection between the visual assessment and the anatomy of the eye and refractive errors
- Describe the workflow process
- Explain pretesting procedures
- Understand the principles of a retinoscope and “with” and “against” motion comparison of the eye reflexes and the lenses
- Identify the difference between a subjective assessment and an objective assessment
- Discuss complications of refractions

Teaching Method: Lecture, using PowerPoint projection

AV Requirements: Laptop projector with screen the appropriate size for the room, flipchart with markers, wireless lavalier microphone if room size designates one.

Outline

- Introduction – **5 minutes**
- Things we will discuss
- Definitions – **2 minutes**
 - What is Refraction
 - Bending of light as light passes from one medium to another
 - Determining the ametropia/s of the eye/s
 - Refractionist
 - Types of refraction
- Patient History/Chief Complaint– **8 minutes**
- Anatomy & Physiology relative to refractions – **10 minutes**
 - What is A&P
 - Refractive mediums of the eye
 - Index of refraction
 - Power of the eye
 - Dimensions/Measurements
 - Structures and how they work
- Refractive Errors – **10 minutes**
- Astigmatism
 - Types
 - Emmetropia
 - Ametropias
- Preliminary Tests – **10 minutes**
 - Instrumentation used
 - Visual Acuity
 - Pupil measurement
 - Pupillary reflexes
 - Ocular motility tests
 - Accommodation
 - Convergence
 - Cover tests

- Stereopsis
- Color Vision
- Visual fields
- Ocular muscle deviations
- Reduced Acuity Testing
- Autorefraction
- Keratometry/Slitlamp
- The Visual Assessment – **50 minutes**
 - Rules for Refraction
 - Refraction 101
 - Instrumentation used
 - Objective Refraction – Retinoscopy
 - Procedures
 - How to perform retinoscopy
 - What is the streak?
 - Subjective Refraction
 - Phoropter
 - Setting it up
 - Where to begin
 - Sequence
 - Steps
 - Jackson Cross Cylinder (JCC) Test
 - Refining the Sphere Power
 - Medications used during refraction
 - Cycloplegic Refraction
 - Fogging the patient
 - Duochrome Test
 - Visual Evaluation
 - Balancing
 - Vertical Prism Dissociation Test
 - Refining

- Accommodation
 - Understanding presbyopia
 - How to determine the ADD
 - One size doesn't fit all.
 - Jaeger Eye Chart
 - Amplitude of accommodation at different ages/stages of life
- Convergence
- Considerations that may present false results
- Chart abbreviations
- Other testing – **10 minutes**
 - Instrumentation used
 - IOP
 - Visual Fields
 - Color vision
 - Eye alignment
 - Motility
 - Depth perception
 - Slit lamp
 - Pupil testing
 - Glare testing
 - Contrast sensitivity
 - Dilation
 - Reduced acuity testing
 - Low Vision
 - Binocular Balance
 - Muscle Testing
 - Deviations
 - Muscle Imbalances
 - Color Vision

- Visual Field
- Complications found during visual assessment – **5 minutes**
- Questions/Answers/Comments/Thank you – **10 minutes**