EMERALD EDUCATION SYSTEMS

# *Understanding Visual Impairments and Functional Rehabilitation of Visually Impaired Patients*

## COURSE OBJECTIVES:

**Lecture 1: Anatomy and Physiology of Vision**
**Authored by: Gislin Dagnelie, Ph.D.**
**Approximately 36 minutes**

As a result of the successful completion of this course, participants will be able to:

- identify the principal structures of the eye
- identify the pathway from the eye to the brain
- identify the principal visual areas of the brain
- state the role of the eye's optics
- describe the function of retinal layers, retinal areas, and principal cell types
- explain the roles of the principal brain structures involved in vision

**Lecture 2: Optics**
**Authored by: Robert W. Massof, Ph.D.**
**Approximately 40 minutes**

As a result of the successful completion of this course, participants will be able to:

- calculate diopters of wave front curvature from object distance
- calculate image distance from knowledge of object distance and lens power
- identify types of lenses required to correct different types of ametropia
- transform refractive error prescriptions from plus to minus cylinder form
- calculate lens power required to see clearly at different viewing distances

**Lecture 3: Perception and Action**
**Authored by: Kathleen A. Turano, Ph.D.**
**Approximately 16 Minutes**

As a result of the successful completion of this course, participants will be able to:

- differentiate between the Traditional Theory of Perception and the Ecological Theory of Perception
- explain the visual guidance of action using examples of postural adjustments and walking
- demonstrate how vision plays a role in perception and action
- illustrate how the roles of vision affects postural adjustments and walking
- list rehabilitation strategies for the visually impaired patient

**Lecture 4: Visual Acuity and Contrast Sensitivity**
**Authored by: Robert W. Massof, Ph.D.**
**Approximately 33 Minutes**

As a result of the successful completion of this course, participants will be able to:

- define visual acuity
- measure visual acuity
- define contrast sensitivity
- measure contrast sensitivity
- describe how visual acuity and contrast sensitivity are related to one another

**Lecture 5: Understanding Visual Function Tests**
**Authored by: Gislin Dagnelie, Ph.D.**
**Approximately 40 Minutes**

As a result of the successful completion of this course, participants will be able to:

- name the common types of perimetry
- outline why each type of perimetry is performed
- identify normal and abnormal visual fields
- describe what field loss patterns ensue from major eye disease categories
- tell how vision rehabilitation can benefit from visual field tests

**Lecture 6: Understanding Refractive Errors**
**Authored by: Shirin Hassan, Ph.D.**
**Approximately 40 Minutes**

As a result of the successful completion of this course, participants will be able to:

- list what types of refractive errors exist and how they can be corrected
- identify symptoms of myopia, hyperopia, and astigmatism
- identify reasons for myopia

**Lecture 7: Anterior Eye Diseases**
**Authored by: Shirin Hassan, Ph.D.**
**Approximately 33 Minutes**

As a result of the successful completion of this course, participants will be able to:

- list the functions of the cornea
- list the disorders of the cornea
- identify the most common corneal dystrophy
- identify examples of corneal degeneration
- list disorders of the iris and how they affect reduced visual acuity
- identify the leading cause of severe visual impairment and blindness in the world

**Lecture 8: Ocular Diseases Causing Visual Impairment and Disability**
**Authored by: Janet S. Sunness, M.D.**
**Approximately 46 Minutes**

As a result of the successful completion of this course, participants will be able to:

- label the basic anatomical structures of the eye
- identify how diseases of given structures affects vision
- identify 3 leading causes of severe vision loss in the adult population
- list treatments to help patients with visual impairments

**Lecture 9: Optics of Low Vision Devices**
**Authored by: Robert W. Massof, Ph.D.**
**Approximately 42 minutes**

As a result of the successful completion of this course, participants will be able to:

- identify type of magnification employed by different low vision devices
- identify the optical characteristics of Galilean and Keplerian telescopes
- calculate the amount of add required for a given magnifier power and viewing distance
- transform magnification to equivalent diopters
- calculate the power of a telescope from measures of lens and exit pupil sizes

**Lecture 10: The Use of Bioptics in Low Vision Rehabilitation**
**Authored by: Suleiman Alibhai, O.D.**
**Approximately 21 minutes**

As a result of the successful completion of this course, participants will be able to:

- identify the different uses of telescopes
- identify characteristics of clients who would be good candidates for bioptics
- list examples of bioptics and identify how they are used
- list advantages and disadvantages of specific bioptics

**Lecture 11: Opto-Electronic Low Vision Enhancement**
**Authored by: Robert W. Massof, Ph.D.**
**Approximately 46 minutes**

As a result of the successful completion of this course, participants will be able to:

- identify opto-electronic low vision enhancement aids
- list basic principles of opto-electronic low vision enhancement
- identify functions of opto-electronic low vision enhancement components
- calculate magnification of an opto-electronic low vision enhancement system
- identify advantages of contrast enhancement

**Lecture 12: Low Vision Rehabilitation Service Providers**
**Authored by: James T. Deremeik, M.A., CLVT**
**Approximately 20 minutes**

As a result of the successful completion of this course, participants will be able to:

- list low vision rehabilitation service providers who provide direct low vision care.
- compare traditional low vision rehabilitation service providers who work in the vocation model of low vision service to medical low vision rehabilitation service providers working in a medical low vision rehabilitation delivery service model.
- differentiate what the various service providers do in the delivery of low vision rehabilitation direct care.
- describe the changing low vision service delivery model from the traditional vocational model to the current medical model.

**Lecture 13: Understanding Functional Assessments in Low Vision**
**Authored by: Robert W. Massof, Ph.D.**
**Approximately 44 minutes**

As a result of the successful completion of this course, participants will be able to:

- identify how World Health Organizations applies to function and function assessments
- identify theory and methods of assessing function
- define theoretical constructs, primarily social value and individual preferences as well as functional abilities and functional reserve
- list the properties of visual abilities and identify their relationships to other functional abilities

**Lecture 14: Visual Skills Training**
**Authored by: James T. Deremeik, M.A., CLVT**
**Approximately 38 minutes**

As a result of the successful completion of this course, participants will be able to:

- describe the different types of visual field limitations that would require visual skills training
- demonstrate the basic techniques of instructions to a low vision patient having central vision loss and peripheral vision loss.
- demonstrate basic visual skills instruction to perform and successfully complete ADL tasks.

**Lecture 15: Low Vision Devices, Training Tips and Techniques**
**Authored by: James T. Deremeik, M.A., CLVT**
**Approximately 36 minutes**

As a result of the successful completion of this course, participants will be able to:

- identify the appropriate low vision equipment for the performance of near, intermediate and distance tasks.
- discuss and demonstrate the instructional techniques and strategies in working with a low vision patient for the performance of near, intermediate and distance tasks using low vision devices.

**Lecture 16: Orientation and Mobility Guiding Techniques**
**Authored by: Duane R. Geruschat, Ph.D.**
**Approximately 22 minutes**

As a result of the successful completion of this course, participants will be able to:

- analyze walking from the patient perspective
- demonstrate specific guiding techniques for the visually impaired patient
- identify what to do and what not-to-do when using guiding techniques

**Lecture 17: The Visually Impaired Driver**
**Authored by: Herbert Simon, CDI**
**Approximately 29 minutes**

As a result of the successful completion of this course, participants will be able to:

- describe the profile of a low vision driver
- identify poor driving habits of a low vision driver
- list compensatory strategies and techniques for the low vision driver

**Lecture 18: ADL Adaptations to the Home**
**Authored by: Christine L. Moghimi, M.A.S., O.T.R.**
**Approximately 40 minutes**

As a result of the successful completion of this course, participants will be able to:

- identify appropriate modifications to the low vision patient's home environment based on their visual impairments and functional complaints (came from home assessment objectives)
- list examples of adaptive equipment and devices to increase safety in the home of the low vision patient

**Lecture 19: Understanding Sensory Substitution-Compensatory Techniques for Vision Loss**
**Authored by: James T. Deremeik, M.A., CLVT**
**Approximately 18 minutes**

As a result of the successful completion of this course, participants will be able to:

- list the multiple sensory input options for gathering information from the environment.
- list examples of the tactual and auditory modality for gathering information form the environment.
- discuss and refer low vision patients for sensory substitution resources from the material provided in the lecture.

**Lecture 20: Auditory Assistive Devices for the Blind**
**Authored by: Robert W. Massof, Ph.D.**
**Approximately 40 minutes**

As a result of the successful completion of this course, participants will be able to:

- identify different classes of auditory devices
- list advantages and disadvantages of sonification
- list advantages and disadvantages of auditory aids
- identify principles of sound localization

**Lecture 21: Education Rehabilitation Services**
**Authored by: James T. Deremeik, M.A., CLVT**
**Approximately 29 minutes**

As a result of the successful completion of this course, participants will be able to:

- differentiate between mandated services for visually impaired children and optional services for visually impaired adults.
- discuss the federal education mandate for visually impaired children in the United States.
- follow the continuum of services from the transition years of high school to the adult service providers of vocational rehabilitation.
- discuss resources for low vision patients and their families that would be helpful.

**Lecture 22: Psychosocial Implications of Low Vision**
**Authored by: Nina M. Glasner, M.S.W., M.A.**
**Approximately 44 minutes**

As a result of the successful completion of this course, participants will be able to:

- summarize the psychosocial implications of low vision
- list the consequences, functional difficulties and common reactions of vision loss
- describe the adjustment process to low vision as adapted from "Self-Esteem and Adjusting with Blindness" by Tuttle and Tuttle
- identify characteristics and common behaviors of grieving of the low vision patient
- identify and address the psychosocial needs of the low vision patient