



THE
HADLEY SCHOOL
FOR THE BLIND

The Human Eye and Visual System ComD 3320 Course Syllabus

Course Description

This course has been designed to be applicable to you if you work with children and youth who are visually impaired. Broad information is presented to enable you to understand many eye conditions and to formulate questions to ask the vision professionals working with your student.

In the first five lessons, concise and clear information is given describing the general anatomy and function of the parts of the eye and the visual system, how these parts all work together to make vision possible, the ways in which vision can be affected when things go wrong, and how eyes are examined and vision tested in an eye doctor's office.

The remaining nine lessons center on a particular part of the visual system. Each one begins with objectives specific to the topic covered, followed by information relating to more detailed anatomy, diseases, or related conditions and their treatments. Practical implications of the most common eye conditions seen in children and youth are discussed. Notice that there are two lessons on Cortical or Cerebral Visual Impairment, now the leading eye disorder in children.

Each lesson has a Powerpoint lecture to go with it, some terms to know, readings, usually some optional practice activities, an assignment, and a short quiz. The assignments are very practical in nature. Each lesson is worth 20 points. There is a midterm worth 75 points and a final worth 75 points. The final only covers material from midterm to the end of the course. Each week, you are asked to respond to a question related to that week's topic in a threaded discussion format.

Text

The text for the course is “The Little Eye Book” available for ordering on the web at Amazon.com. Printable articles are included for additional reading with each lesson. And at times a link is provided for an article available on a particular site.

Course Objectives

After completing this course you will be able to:

1. Describe how the eye and the visual system work and identify the basic structures of the eye and the visual system.
2. Identify various vision professionals involved in the lives of students with vision impairments and what each does.
3. Describe what takes place in an eye exam, some of the procedures used and basic information gained from an eye exam.
4. Discuss the six key ways in which vision can be affected and some basic adaptations needed for each.
5. Discuss briefly the principles of how vision use develops and general sequences of visual development.
6. Discuss the most common eye disorders seen in children and youth and their implications (e.g., refractive errors, glaucoma, cataracts, strabismus, ROP, retinal Diseases, optic nerve disorders, etc.).
7. Know some of the most common genetic diseases and syndromes that include vision loss.
8. Define what cortical or cerebral visual impairment is and some of its characteristics.

Lessons by Week

- Lesson 1: Structure and Function of the Anterior Visual System
- Lesson 2: Structure and Function of the Posterior Visual System
- Lesson 3: Ways Vision Can Be Affected (Acuity Loss, Field Loss, Color, Contrast Sensitivity, Oculomotor, Processing)
- Lesson 4: Visual Development (in utero, things that affect eye development and later visual development; the visual response continuum)

- Lesson 5: The Clinical Eye Exam (eye specialists, terms, procedures)
- Lesson 6: Problems with the Eyeball and the Muscles (micro and anophthalmia, Retinoblastoma, strabismus, amblyopia, prostheses)
- Lesson 7: Problems with the Front Portions of the Eye (cornea, conjunctiva, ciliary Body)
- Lesson 8: The Lens, Refractive Errors and Problems with Accommodation (Cataracts)
- Midterm: Test (week 9)
- Lesson 9: The Retina-Eye Diseases of Adults (macular degeneration, diabetic Retinopathy)
- Lesson10: The Retina-Eye Diseases of Children (retinopathy of prematurity, color Blindness)
- Lesson 11: Conditions of the Optic Nerve (optic nerve hypoplasia, septo optic dysplasia, optic nerve atrophy)
- Lesson 12: Genetic Diseases and Syndromes that Cause Vision Loss (lebers, aniridia, albinism, Downs)
- Lesson 13: Cortical/Cerebral Visual Impairment, Part I
- Lesson 14: Cortical/Cerebral Visual Impairment, Part II
- Final: Test (week 16)

How to Get Started

Begin by clicking on "Lesson 1: "Structure and Function of the Anterior Visual System." You'll notice that as you click on a lesson link, the list expands to reveal its components, including subsections and the assignment.