

## **OPH 260**

### **BASIC CONTACT LENS CONCEPTS**

#### **COURSE DESCRIPTION:**

Prerequisites: OPH 121 and OPH 141

Corequisites: None

This course introduces the theory of contact lens fitting. Emphasis is on rigid and soft contact design and fitting concepts. Upon completion, students should be able to describe basic contact lens fitting concepts. Class Hours Per Week: Class, 3. Semester hours Credit, 3.

#### **COURSE OBJECTIVES:**

Upon completion of the course, the student will be able to:

- a. cite the major landmarks in contact lens development.
- b. describe current rigid and soft contact lens materials and manufacturing techniques.
- c. describe the optics associated with rigid and soft contact lenses.
- d. interpret rigid and soft contact lens prescriptions.
- e. record patient history.
- f. describe use of contact lens fitting and verification instruments.
- g. describe fitting contact lenses using the universal method.
- h. relate patient symptoms to rigid and soft contact lens adjustment.
- i.

- C. Adnexa
- II. Rigid and soft contact lens history
  - A. First applied lenses
    - 1. Period of 18<sup>th</sup> century
    - 2. Period of 19<sup>th</sup> century
  - B. Contact Lenses in America
    - 1. Glass lenses
    - 2. Plastic lenses
  - C. Modern developments
    - 1. Single vision
    - 2. Multifocal
  - D. The future of contact lenses
- III. Optics of contact lenses
  - 1. Refraction in contact lenses
  - 2. Prism in contact lenses
  - 3. Determination of lens power
    - a. Front vertex
    - b. Back vertex
- IV. Rigid and soft contact lens designs and parameters
  - A. Rigid contact lens designs
    - 1. Single vision
    - 2. Multifocal
    - 3. Lenticular
  - B. Single curve contact lenses
  - C. Multi-curve contact lenses
  - D. Prism ballast contact lenses
  - E. Truncated contact lenses
  - F. Junctions
  - G. Measurements
- V. Rigid and soft contact lens terms and symbols
  - A. Abbreviations
  - B. Dioptric increments
  - C. Keratometric terms
- VI. Rigid and soft contact lens formulas and computations
  - A. Radius of curvature formula
  - B. Nominal power formula
  - C. Vertex distance calculations
  - D. Sag formula
  - E. Determination of toric curvature
  - F. The tear lens
  - G. Front vertex power

- H. Back vertex power
- VII. Rigid and soft contact lens materials and manufacture
  - A. Basic chemistry
  - B. PMMA material
  - C. Gas-permeable materials
  - D. Manufacturing process
- VIII. Rigid and soft contact lens instrumentation
  - A. Ophthalmometer – basic optics and procedure
  - B. Keratometer – basic optics and procedures
  - C. Slit lamp
  - D. Radiuscope
  - E. Measuring ruler
  - F. Measuring magnifier
  - G. Lensometer
  - H. Diameter gauge
  - I. Thickness meter
  - J. Evaluative testing: Fluorescence patterns and SchPMMB1 0 Td ( imear2262sescenfi2.246 Tc 1 0 0 ris29 ( pw 36ripTw 8s2 Tc0procMMb1 -dure)



Contact Lens Society of America. Contact Lens Manual – A Comprehensive Study & Reference Guide

**SUGGESTED REFERENCE:**

Stein, Slatt, and Stein. Fitting Guide for Rigid and Soft Contact Lenses, 3<sup>rd</sup> ed. C.V. Mosby, 1990.

**STATEMENT OF STUDENTS WITH DISABILITIES:**