



A: Division: **HEALTH SCIENCES** Date: **January 8, 2001**
 B: Department/ **DISPENSING OPTICIAN** New Course Revision
 Program Area: **PROGRAM**
 If Revision, Section(s) Revised: **G, M, N, E, F**
 Date Last Revised: **April 1, 1996**

C: **DOPT 400** D: **CONTACT LENS THEORY I** E: **7**

Subject & Course No. Descriptive Title Semester Credits

F: Calendar Description:
 This course will provide students the knowledge of Anatomy and Physiology of the eye in relation to contact lens fitting. It will provide the skills of instrumentation in fitting contact lenses, convert and verify prescriptions, and examine the relationship between contact lens fit and corneal health. It provides students the ability needed to evaluate suitability for contact wear, by patient ocular history and examination. The ability to design the contact lens, select appropriate material, train the patient proper handling technique, lens care and hygiene. It will identify surgical alternatives and pertinent professional standards of practice.

G: Allocation of Contact Hours to Types of Instruction/Learning Settings

 Primary Methods of Instructional Delivery and/or Learning Settings:

Lecture and Student Directed Learning

 Number of Contact Hours: (per semester for each descriptor)

Lecture: 75 hrs.
Student Directed Learning: 100 hrs.

 Number of Weeks per Semester: **15**

H: Course Prerequisites:

DOPT 310 or Meeting Direct Entrance Requirements

I. Course Corequisites:

DOPT 410, 412

J. Course for which this Course is a Prerequisite:

DOPT 500

K. Maximum Class Size:
35

L: PLEASE INDICATE:

Non-Credit
 College Credit Non-Transfer
 College Credit Transfer: Requested Granted

SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS (www.bccat.bc.ca)

M: Course Objectives/Learning Outcomes

Upon successful completion, the student will be able to:-

1. 1.1 Define medical and ophthalmic terms pertaining to the anatomy and physiology of the eye
 - 1.2 Identify the structures of the eye
 - 1.3 Describe the function of the cornea
 - 1.4 Describe the function of tear fluid
 - 1.5 Describe corneal topography
 - 1.6 Define some common pathological conditions of the eye

2. 2.1 Define contact lens design terminology
 - 2.2 Describe the physical construction of contact lenses
 - 2.3 Define the forces that affect the lens fitting relationship to the eye
 - 2.4 Define toric lens design

3. 3.1 Calculate contact lens power by formula
 - 3.2 Calculate contact lens power by formula for vertex compensation
 - 3.3 Calculate lens power change by problem solving
 - 3.4 Calculate residual astigmatism by formula
 - 3.5 Describe convergence with contact lenses
 - 3.6 Calculate image size displacement

4. 4.1 Define the medical and ophthalmic terminology pertaining to verification instruments
 - 4.2 Define the use of the following instruments:

Lensometer	Hand Magnifier
Thickness Gauge	Shadowgraph Analyzer
Diameter Gauge	Radioscope

5. 5.1 Define the components of soft and rigid contact lens materials
 - 5.2 Describe the advantages and disadvantages of soft and rigid contact lens materials
 - 5.3 Describe the importance of wetting angles, permeability, and transmissibility of soft and rigid contact lenses

6. 6.1 Define the medical and ophthalmic terminology of contact lens solutions
 - 6.2 Categorize solutions by components
 - 6.3 Describe the function of solution components

7. 7.1 Describe the procedure of lens insertion and removal for practitioner and patient
 - 7.2 Demonstrate the correct procedure for lens insertion and removal of soft and rigid contact lenses

8. 8.1 State the history of contact lens development and identify by name the person associated in each development
 - 8.2 Describe the various methods of manufacturing soft and rigid contact lenses
 - 8.3 Describe the methods of rigid lens modifications

9. 9.1 Define Ophthalmic terminology pertaining to surgical alternatives
 - 9.2 Be able to give clear descriptions of Surgical Alternatives

10. 10.1 Become familiar with the Standards of Practice of Dispensing Opticians (Eyeglasses) from the College of Opticians of B. C. pertaining to tools required, optical tolerances and professional conduct.

N: Course Content**1. Introduction**

- course content and requirements
- sign pledge to code of ethics and practice standards
- orientation to College Of Opticians Bylaws and Guidelines
- responsibilities to the contact lens patient by Health Care Providers

2. Anatomy and Physiology

- ophthalmic terminology
- structure of the eye
- function of the cornea
- function of tear fluid
- corneal topography
- medical terminology
- pathology of the eye

3. Basic Contact Lens Design

- ophthalmic terminology of contact lenses
- rigid contact lens design
- soft contact lens design
- primary force relationship
- toric lens design

4. Optics Review

- contact lens power calculation
- tear fluid power calculation
- conversion of radius to dioptres
- calculation of vertex correction
- spherical equivalent calculation
- residual astigmatism calculation
- contact lens convergence
- image size ratio

5. Instrumentation**5.1 Inspection and Verification Instruments**

- ophthalmic terminology
- equipment identification
- operating procedure
- equipment function
- contact lens inspection

5.2 Examination Instruments

- ophthalmic terminology
- equipment identification
- operating procedure
- equipment function
- flourescein procedure

N: Course Content Cont'd

6. **Contact Lens Material**
 - ophthalmic terminology
 - contact lens materials
 - properties of lens materials
 - components of soft lens materials
 - components of rigid lens materials

7. **Surgical Alternatives**

Medical and ophthalmic terms pertaining to surgical alternatives to spectacle and/or contact lens wear, including the following:

 - refractive keratoplasty
 - keratomileusis
 - keratophakia
 - epikeratoprosthesis
 - radial keratotomy
 - Photo refractive Keratectomy (PRK)
 - intraocular lens implants
 - Automated Lamellar Keratoplasty (ALK)
 - Laser assisted in Situ Keratomileusis (LASIK)

8. **Standards of Practice**
 - client management
 - records management
 - supervision and responsibility
 - professional ethics
 - equipment for dispensing eyeglasses
 - tolerances for dispensing eyeglasses

O: Methods of Instruction

1. Lecture
2. Calculation exercises in classroom
3. Independent study of courseware
4. Independent completion of post tests
5. Completion of field assignments

P: Textbooks and Materials to be Purchased by Students

Mandell, **Contact Lens Practice**, Fourth Edition, Charles C. Thomas Publishing

Stein - Slatt - Stein, **Fitting Guide for Rigid and Soft Contact Lenses** Third Edition, C.V. Mosby Co.

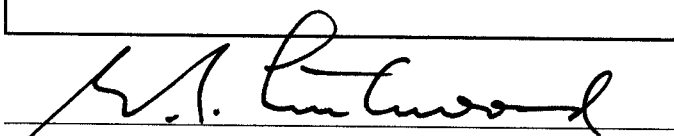
Stein - Slatt - Stein, **A Primer in Ophthalmology**, 1992 Edition, Mosby Yearbook Co.

Douglas College **Contact Lens Courseware**

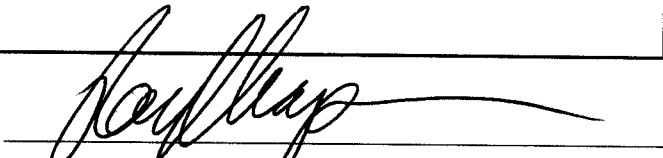
Q: Means of Assessment
Evaluation of the course will be based on the course objectives in accordance with Douglas College policies. Evaluation methods will include written tests and assignments.

1.	Completion of post tests	20%
2.	Midterm exams (X2)	40%
3.	Final exam	30%
4.	Completion of field assignments	10%

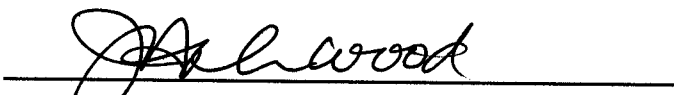
R: Prior Learning Assessment and Recognition: specify whether course is open for PLAR
No




Course Designer(s)



Education Council/Curriculum Committee Representative



Dean/Director



Registrar