Douglas College

**EFFECTIVE: SEPTEMBER 2002**

# CURRICULUM GUIDELINES

**A:** Division: **HEALTH SCIENCES**

**B:** Department/ Program Area: **DISPENSING OPTICIAN PROGRAM**

Date: **May 23, 2002**

New Course [ ] Revision [X]

If Revision, Section(s) Revised: **M**

Date Last Revised: **January 8, 2001**

**C:** **DOPT 512** (Subject & Course No.) **D:** **CONTACT LENS LABORATORY II** (Descriptive Title) **E:** **4** (Semester Credits)

**F:** Calendar Description: This course provides students advanced laboratory skills for systematic recognition of contact lens material and solution complications as they relate to ocular application. It provides an advanced level of evaluation of specialized contact lens materials, including the designing and modification of such materials for ocular applications. Students will develop the ability to verify visual acuity by over-refraction through the use of instrumentation for the proper fitting of contact lenses.

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

Primary Methods of Instructional Delivery and/or Learning Settings:

**Laboratory**

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

**Laboratory:** **120**

Number of Weeks per Semester: **15**

**H:** Course Prerequisites:
**DOPT 400 AND DOPT 410 AND DOPT 412**

**I.** Course Corequisites:
**DOPT 500, DOPT 510**

**J.** Course for which this Course is a Prerequisite:
**DOPT 610**

**K.** Maximum Class Size:
**14**

**L:** PLEASE INDICATE:

- [ ] Non-Credit
- [X] 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. Demonstrate progressive competency with the use of the following instruments for hard and gas permeable contact lens fitting and analysis:

| | | |
|---|---|---|
| Slit Lamp Biomicroscope | Keratometry | Lensometry |
| Profile Analyzer | Hand Loop | Diameter Gauge |
| Vertex Conversion Chart | Dioptric Conversion Chart | Radiuscope |
| Acuity Charts | Acuity Trial Lens Set | |
| Modification Bucket | Modification Tools | |

2. Demonstrate skills and knowledge through use of instrumentation on hard and gas permeable contact lens materials, and the relationship to fitting applications.

3. Demonstrate knowledge of hard and gas permeable lens materials to the design and modification of specialty lens applications.

4. Evaluate material and fitting characteristics of hard and gas permeable lenses based on knowledge of chemical properties and characteristics of contact lens materials.

5. Identify imperfections of hard and gas permeable lens materials, recognize the probable cause, and identify the resolution.

6. Recall knowledge of hard and gas permeable lens materials by manufacturer, label name, material compound names, surface wetability, power range and recommended patient fitting procedure and wearing schedule.

7. Recall knowledge of hard and gas permeable lens disinfection systems, lens storage solutions, surfactant cleaning solutions, enzyme cleaners, rewetting agents, and medically prescribed pharmaceutical agents.

8. Recall knowledge of hard and gas permeable lens solutions by manufacturer, brand name, chemical ingredients, recommended usage.

9. Analyze effective and non-effective solutions by contact lens surface examination.

10. Perform hard and gas permeable lens parameter modifications by instrumentation.

11. Recall knowledge of over-refraction techniques for verification of patient's visual acuity.

**N:** Course Content

**1. Introduction**
- Laboratory objectives
- Laboratory hygiene
- Hard and gas permeable equipment

**2. Verifying Visual Acuity / Over-Refraction with Contact Lenses**
- 2.1 Trial lens acuity set
- 2.2 Mathematical calculations
- 2.3 Verifying spherical lens corrections
- 2.4 Verifying toric lens corrections
- 2.5 Verifying presbyopic corrections
- 2.6 Visual acuity complications
- 2.7 Referring to Optometrist or Ophthalmologist

**3. Hard and Gas Permeable Lens Types, Materials Characteristics, and Fitting Relationship to Ocular Health**
- 3.1 Material compounds
- 3.2 Material configurations and design
- 3.3 Lens parameter determination
- 3.4 Chemical properties of contact lenses
- 3.5 Manufacturer's material limitations
- 3.6 Specialty lens materials

**4. Hard and Gas Permeable Lens Solution Properties, Chemical Compounds, and Relationship to Ocular Health**
- 4.1 Chemical Disinfection Systems
- 4.2 Ultrasonic Disinfection Systems
- 4.3 Surfactant Cleaners
- 4.4 Enzyme Cleaners
- 4.5 Rewetting Agents
- 4.6 Medically Prescribed Ocular Pharmaceutical Agents

**5. Solution Procedures / Specific Function**
- 5.1 Chemical Disinfection Systems
- 5.2 Ultrasonic Disinfection Systems
- 5.3 Surfactant Cleaners
- 5.4 Enzyme Cleaners
- 5.5 Rewetting Agents

**6. Contaminants / Bacteria / Fungus, and Complications to Ocular Health**
- 6.1 Chemical contamination
- 6.2 Fungus / Bacterial growth
- 6.3 Protein Build up
- 6.4 Calcium deposits
- 6.5 Airborne contamination

**7. Lens Deformation / Defaults and the Relationship to Fitting Complications**
- 7.1 Minuscule cracks
- 7.2 Stress cracks
- 7.3 Lathe cut deposits
- 7.4 De-Blocking deposits
- 7.5 Edge deformation
- 7.6 Curvature changes
- 7.7 Unsterile cases and solution

**8. Hard and Gas Permeable Specialty Materials and Fitting Applications**

- 8.1 Keratoconus lenses
- 8.2 Astigmatic lenses
- 8.3 Piggy - Back lenses
- 8.4 Aphakic lenses
- 8.5 Pediatric lenses
- 8.6 Orthokeratology lenses

**9. Hard and Gas Permeable Lens Design Analysis and Parameter Modification**

- 9.1 Monocurve tooling
- 9.2 Bicurve tooling
- 9.3 Tricurve tooling
- 9.4 Blending
- 9.5 Edge contouring
- 9.6 Prism Ballast lenses
- 9.7 Truncating
- 9.8 CN bevelling
- 9.9 Toric lens tooling
- 9.10 Polishing

**O:** Methods of Instruction

1. Laboratory Lectures
2. Application / Instrumentation exercises in Laboratory
3. Independent study of courseware
4. Completion of Proficiency Tests
5. Completion of Laboratory Assignments

**P:** Textbooks and Materials to be Purchased by Students

Mandell, Contact Lens Practice. (Latest Edition) Charles C. Thomas Publishing

Douglas College 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, oral and clinical assignments.

| | | |
|---|---|---|
| 1. | Completion of laboratory exercises | 30% |
| 2. | Midterm exams | 30% |
| 3. | Final Exam | 30% |
| 4. | Completion of proficiency test | 10% |

**R:** Prior Learning Assessment and Recognition: specify whether course is open for PLAR

Yes

Course Designer(s)

Education Council/Curriculum Committee Representative

Dean/Director

Registrar