I. Basic course Information
   A. Course Number and Title: OPTH-200  CONTACT LENSES I
   B. Date of Proposal or Revision: Spring 2009
   C. Sponsoring Department: Health Science Education
   D. Semester Credit Hours: 3
   E. Weekly Contact Hours: Lecture: 3
                               Laboratory 0
   F. Prerequisites: Ophthalmic Materials I Lecture, OPTH-100
                     Ophthalmic Materials II Lecture, OPTH-101
                     Anatomy & Physiology of the Eye, OPTH-121
   G. Laboratory Fees: No

II. Catalog Description

   Prerequisites: Ophthalmic Materials I Lecture, OPTH-100
                 Ophthalmic Materials I Lecture, OPTH-100
                 Anatomy & Physiology of the Eye, OPTH-121

   Includes a historical review as well as theory; design and optical principles of contact lenses;
   indications and contraindications for contact lens wear; patient evaluation; discussion of lens
   types and availability; fundamental techniques and fitting procedures including the
   biomicroscope and keratometer; evaluation of fit and patient education on care, cleaning,
   insertion and removal of contact lenses.

III. Statement of Course Need:

   This is a required course for both the Ophthalmic Science Degree and apprentice students.

IV. Place of Course in College Curriculum
A. Free Elective  
B. This is not a general education course  
C. This is a required course for both the Ophthalmic Science degree and apprentice students.  
D. This is a non-transferrable course.

V. Outline of Course Content

A. Historical review, anterior segment anatomy and physiology, bulbar and palpebral conjunctiva, corneal metabolism, structures, characteristics, parameters and transparency. Tear film, lid movements, Shirmer’s tests, B.U.T., optical and refractive conditions of the eye.

B. Indications and contraindications for contact lens wear, prefit evaluation, keratoconus, corneal scars and irregularities, prosthetics, aphakia, microphthalmos, diabetes, hyperthyroidism, chronic sinusitis, herpes simplex, skin conditions and allergic reactions, rheumatoid arthritis, keratoconjunctivitis sicca, atopic eczema, corneal edema and ulcers, environmental contraindications.

C. Patient interview and evaluation, age, gender, occupational conditions, pharmaceuticals, personal habits and hygiene, interpretation and classification of prescription, with and against the rule astigmatism, residual astigmatism, neutralizing astigmatism, oblique astigmatism, keratometry reading.

D. Contact lens design and function, optical zone, intermediate zone, central posterior curve, bevel, flange, myodisc, bifocal and lenticular. HEMA advantages and disadvantages. Biomicroscopy, sclerotic scatter, direct illumination, specular reflection, indirect illumination, retro illumination, diffuse illumination and conical sections.


F. Rigid fitting procedures, refractive elements, determining Rx, vertex calculations, keratometry and A.N.S.I. standards, lens modification: changing intermediate and peripheral curves, thinning and reshaping edges and vertex power changes. Insertion, removal, care and cleaning of rigid lenses.
VI. Educational Goals and Learning Outcomes

A. Educational Goals:

1. The students will develop a significant foundation in the principles of fitting contact lenses (GE-RVCC 1, 2, 7; NJ 1, 4).
2. The student will learn how to use the correct criteria in order to identify the proper fit of a contact lens in each lens category (GE-RVCC 1, 2, 7; NJ 1, 4).

B. Learning Outcomes

The student will be able to:

1. Describe the anatomy and physiology of the ocular anterior segment, tear film and palpebrae.
2. Describe the optical concepts and fitting techniques of contact lenses and apply that knowledge to patient indications and contraindications as presented in the text.
3. Explain the various types of contact lenses, their function and application, cleaning and care of contact lenses, aseptic techniques in their usage and to be able to properly educate the patient on these matters.
4. Explain the function and procedural usage of the biomicroscope and keratometer.
5. Explain the fitting procedure of soft contact lenses according to the text.
6. Explain the fitting procedure of rigid contact lenses, including allowances for K discrepancies.
7. Describe the proper procedure for determining the fit evaluation of any category of contact lenses according to the course handout.
8. Demonstrate the proper techniques and instrumentation necessary to verify the accuracy of a finished contact lens of any category.
9. Be prepared for the contact lens portion of the New Jersey State Board of Ophthalmic Dispensers Examination or a similar examination such as the NCLE.

VII. Modes of Teaching and Learning
A. Lecture/discussion
B. Computer assisted instruction
C. Laboratory

VIII. Papers, Examinations and other Assessment Instruments
A. Essays
B. Written examinations
IX. Grade Determinants
   A. A two-hour examination assessing learning outcomes 1 through 4.
   B. A two-hour examination assessing learning outcomes 5 through 8.
   C. A comprehensive final examination assessing learning outcomes 1 through 9.

X. Texts and Materials
   B. Course handout
   C. Power point presentation
   D. CD-ROMs

XI. Resources
   This course requires computer and projection equipment as well as access to contact lens instrumentation.