RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE

OPTH 112 OPHTHALMIC DISPENSING II LECTURE

I.   **Basic course Information**

A. Course Number and Title: OPTH 112 Ophthalmic Dispensing II Lecture

B. Modified Course

C. Date of Proposal: Semester: Fall   Year: 2022

D. Effective Term: Fall 2023

E. Sponsoring Department: Health Science Education

F. Semester Credit Hours: 3

G. Weekly Contact Hours: 3   Lecture: 3

                                                        Lab: 0

                                                        Out of class student work per week: 6

H. Prerequisites: OPTH-111 - OPHTHALMIC DISPENSING I LECTURE

I. Additional Fees: No

J. Name and E-Mail address of Department Chair and Divisional Dean at time of approval:

Chair Linda Romaine linda.romaine@raritanval.edu

Dean Sarah Imbriglio sarah.imbriglio@raritanval.edu

II.   **Catalog Description**

Prerequisite: OPTH-111 – Ophthalmic Dispensing Lecture I

A continuation of Ophthalmic Dispensing I Lecture. A further study of prescription analysis including visual problems of the aphakic patient, crossed cylinders, consideration of illumination and its effect on visual performance, the psychology of dispensing, the near addition and iseikonic lens design.

III.   **Statement of Course Need:**

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A. This is a required course for the Ophthalmic Science-AAS degree, and Ophthalmic science (Opticianry) Certificate- Apprenticeship Option.
B. There is no lab component.
C. This course is not designed for transfer.

IV.   Place of Course in College Curriculum

A. Free Elective
B. This is a required course for the Ophthalmic Science-AAS degree, and Ophthalmic science (Opticianry) Certificate- Apprenticeship Option.

V.   Outline of Course Content

A. Image jump, vertical imbalance, corrections for vertical imbalance; slab-off, compensated r-segs, dissimilar segments, prism in segments, two pairs of spectacles.

B. Complete vertical imbalance corrections, lateral decentration of near segments, reading field size (height/width) through bifocal segments.

C. Reading field size, convergence/accommodation theory, range of clear vision, reserve percentages.

D. Amplitude of accommodation, accommodative convergence, fusional convergence, positive relative convergence, presbyopic prescription analysis, prism diopters of convergence, accommodation/convergence ration.

E. Aphakia, cataract lens fitting, ring scotoma, jack in the box effect, ultraviolet light exposure, PD change, vertex compensation, tilt, vertical optical center placement, back curve considerations.

F. Cataract lens fitting continued: Loaner spectacles, frame criteria and selection, symmetry, adjustable pads, decentration, M.E.D., lens selection: Aspherics, P.A.L., bulb size, bifocal styles, welsh 4-drop, fitting criteria and measurements.

G. Monocular fitting parameters, prism to stimulate convergence, fusion demands, tints and coatings, patient delivery, patient education, Gerstman rule for dioptic demand, Lebenshon rule of insets.

H. Approximation formula for insets, crossed cylinders at oblique axes.

I. Over-refractions, graphical solution for crossed cylinders at oblique axes.

J. Irlen lens, dyslexia, simple magnifiers, Rule of Four, iseikonic lenses.

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K. Iseikonic lenses continued; magnification formula (shape and power), magnification, minification, lens variables, lens variable formulas.

L. Graphical solution to compound prism, graphical solution to resolving prism, complex compound prism and its graphical solution.

M. Lens designs and update: Transitions, Cosmolite, Hyperal, Thin and Lite, Polycarbonate, photochromics, etc.

N. Lens update continued; product liability and the opticians' requirements to limit liability, professional negligence, strict liability and breach of implied warranty.

VI.   A. Course Learning Outcomes

At the completion of the course, students will be able to:

1. Describe the complexities of, and have the skills to identify, the most complex ophthalmic prescriptions (GE- 2).
2. Describe the need for paper documentation in order to minimize professional liability (GE- 1).

3. Demonstrate the skills required to analyze a presbyopic prescription in order to determine if there is a need for correction of vertical imbalance according to state tolerances.

4. Explain the subject of accommodation/convergence theory as discussed in lecture.

5. Explain the concept of the proper interpretation and fitting of aphakic and other high powered prescriptions according to the course handout.

6. Calculate and apply segment insets in order to facilitate convergence.

7. Calculate crossed cylinders, compound prism and resolving prism both mathematically and graphically.

8. Explain scotopic sensitivity syndrome and its treatment with the Irlen Lens.

9. Analyze aniseikonic prescriptions and design iseikonic lenses for their treatment according to the standards discussed in lecture.

10. Explain the fitting parameters of current lens designs as presented by the classmates.

11. Explain the causes and preventions of an optician's liability.

B . Assessment Instruments

1. Research paper

2. Written examinations

VII. Grade Determinants

    A. examinations

Given the goals and outcomes described above, LIST the primary formats, modes, and methods for teaching and learning that may be used in this course:

A. lecture/discussion
B. small group work
C. computer assisted instruction

VIII. Texts and Materials

    A. Brooks, Clifford and Borisch, Irving. <u>Systems for Ophthalmic Dispensing, Third Ed.</u> Stoneham, MA.: Butterworths, 2007
    B. supplemental handouts.
    C. film and video
    D. web sources
    E. power point presentations

(Please Note: The course outline is intended only as a guide to course content and resources. Do not purchase textbooks based on this outline. The RVCC Bookstore is the sole resource for the most up-to-date information about textbooks.)

XI. Resources

    A. Computer access
    B. Projection

X. Honors Option : N/A