

**RARITAN VALLEY COMMUNITY COLLEGE  
ACADEMIC COURSE OUTLINE**

**OPTH-111 OPHTHALMIC DISPENSING I LECTURE**

**I. Basic course Information**

A. Course Number and Title: OPTH-111 Ophthalmic Dispensing I Lecture

B. New or Modified Course: Modified

C. Date of Proposal: Semester: Spring Year: 2017

**D. Effective Term: Fall 2017**

E. Sponsoring Department: Health Science Education

F. Semester Credit Hours: 3

G. Weekly Contact Hours: Lecture: 3

Out of class student work per week: 6

H. Prerequisites: OPTH-101 - Ophthalmic Materials II Lecture

I. Laboratory Fees: No

J. Department Chairperson: Beryl Stetson, 908-526-1200, ext. 8877

**II. Catalog Description**

Prerequisite: OPTH-101 - Ophthalmic Materials II Lecture

Ethics, practices, and responsibilities of the ophthalmic Dispenser. Includes determination of patient's needs, prescription analysis and interpretation of single vision, multifocal, and prism lenses, considerations in making glasses for occupational use, lens aberrations, the effect of tilt, and tinted lenses and their uses.

**III. Statement of Course Need:**

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 both the Ophthalmic Science degree and Ophthalmic Science (Opticianry) Certificate.

#### **V. Outline of Course Content**

- A. Assessment exam, review of materials formulae.
- B. Assessment exam review, continue materials formulae review, glossary, refraction of a single light ray.
- C. Refraction of multiple light rays, angle of incidence, angle of refraction,  $N$ , prismatic deviation, Snell's Law.
- D. Vergence, conjugate points, image and object vergence, focal points in vergence, lens forms vs. refractive errors, glossary review.
- E. Corrected curve theory, true and marked power, sagitta, introduction of lens aberrations.
- F. Coma, distortion, marginal/radial astigmatism, chromatism, curvature of field, spherical aberration, contrast sensitivity, vertex considerations.
- G. Front and back vertex power, lens thickness, positional lens power.
- H. Martin's formula, lens tilt, effective prescription changes.
- I. Pantoscopic tilt origin, anatomical considerations, optical center alignment, optical center correction, spherical prescription resultant power changes.
- J. Sphero-cylinder prescription resultant power changes; formulae, parabolic curvature, effective Rx changes, formulae.
- K. Face planes, eye positions and movements, primary position, angle of azimuth and altitude, Listing's plane, Olsho's baseline, cardinal, secondary and tertiary movements.
- L. Absorptive lenses and coatings, effects on visual acuity, destructive interference principles, indications and contraindications, ultraviolet radiation and ocular damage.

- M. Visual acuity and the Snellen System of measurement, far point, far point sphere, duo chrome test, Jaeger System, motor vehicle standards, patient management and professional ethics.

## **VI. General Education and Course Learning Outcomes**

### **A. General Education Learning Outcomes:**

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

1. The student will recite optical terminology and explain the foundation of geometric optics (GE-NJ 1,2)
2. The student will explain the visual acuity systems available today (GE-NJ 2)

### **B. Course Learning Outcomes**

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

1. Demonstrate a thorough knowledge of optical principles previously learned in materials I & II lecture.
2. Demonstrate a foundation in geometric optics to facilitate further learning in Principles of Optics.
3. Develop a vocabulary in appropriate ocular terminology in order to interact appropriately with other optical professionals.
4. Demonstrate the knowledge and understanding of lens aberrations and their application to the corrected curve theory.
5. Describe the knowledge and skills required to adapt prescription eyewear while avoiding the lens aberrations associated with pantoscopic tilt.
6. Develop a knowledge of ocular planes, positions and movements according to the course handout.
7. Describe an understanding of the indications and contraindications for ophthalmic absorption lenses as presented in the text.
8. Explain the assessment techniques for visual acuity and the New Jersey Motor Vehicle visual requirements.
9. Discuss the professional ethics and conduct expected of a licensed Ophthalmic Dispenser

### **C. Assessment Instruments**

1. written examinations
2. written quizzes
3. group oral presentation

### **VII. Grade Determinants**

- A. examinations
- B. oral presentations

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

- A. lecture/discussion
- B. small group work
- C. computer assisted instruction
- D. student oral presentations
- E. simulation/role playing

### **VIII. Texts and Materials**

- A. Textbook: Brooks, Clifford & Borisch, Irving. Systems for Ophthalmic Dispensing, Third Ed. Stoneham, MA.: Buttersworths, 2007.
- B. Supplemental Handouts.
- C. Power point presentations
- D. Internet web sources

(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.)

### **IX. Resources**

- A. Computer
- B. Projection