ALEXANDRIA TECHNICAL AND COMMUNITY COLLEGE

OPMT 1550: PHYSICAL AND CLINICAL OPTICS

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: 3
Lab Hours/Week: 0
OJT Hours/Week: *

Prerequisites:
This course requires all three of these prerequisites
OPMT 1510 - INTRODUCTION TO OPHTHALMOLOGY (NUMBER OF YEARS VALID: 5)
OPMT 1500 - OPHTHALMIC MEDICAL TERMINOLOGY (NUMBER OF YEARS VALID: 5)
PHYS 1100 - FUNDAMENTALS OF PHYSICS

Corequisites: None
MnTC Goals: None

This course introduces students to the principles of physical and clinical optics necessary for assisting patients with eyeglass, contact, and intraocular lenses. The physical optics content will introduce concepts of light and phenomena related to light travel through a vacuum and various optical media and how these work in lenses and mirrors. The clinical optics content will introduce the human eye as an optical system and how lenses and prisms are used to improve vision and the working of the eyes.

B. COURSE EFFECTIVE DATES: 10/26/2021 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Describe the physical properties of light
2. Explain the various light phenomena
3. Distinguish types of lenses
4. Draw the optical cross
5. List and explain types of astigmatism
6. Describe image formation inside the eye
7. Discuss accommodation in the eye
8. Identify uses of prisms
9. Describe protocols for contact lens fitting
10. Describe spectacle lens concepts

D. LEARNING OUTCOMES (GENERAL)

1. Describe light and its physical phenomena
2. Explain physiology of image formation and errors
3. Write lens measurements for correcting vision

E. MINNESOTA TRANSFER CURRICULUM GOAL AREA(S) AND COMPETENCIES

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus
G. SPECIAL INFORMATION

None noted