

OPT-2972: OPTICAL FIELD EXPERIENCE SEMINAR I

Cuyahoga Community College

Viewing: OPT-2972 : Optical Field Experience Seminar I

Board of Trustees:

May 2024

Academic Term:

Fall 2024

Subject Code

OPT - Optical Technology

Course Number:

2972

Title:

Optical Field Experience Seminar I

Catalog Description:

Integrates concepts and knowledge gained from field experience rotations into total learning process. Focuses on patient and professional communication and lifelong learning. Discusses current issues.

Credit Hour(s):

2

Other Hour(s):

2

Other Hour Details:

Seminar: 2 hours per week

Requisites

Prerequisite and Corequisite

Concurrent enrollment in OPT-2940 Optical Field Experience I.

Outcomes

Course Outcome(s):

Apply didactic lessons to clinical settings.

Objective(s):

1. Compose written case studies from personal experience, including a description of the patient concern and a proposed solution.
2. Discuss solutions to case studies.
3. Discuss how ocular conditions pertain to spectacle design.
4. Interpret ophthalmic prescriptions.
5. Assess patient concerns.

Course Outcome(s):

Evaluate problems with eyewear in order to make adjustments to the fit and design of eyewear.

Objective(s):

1. Compose written case studies from personal experience, including a description of the patient concern and a proposed solution.
2. Discuss solutions to case studies.
3. Interpret ophthalmic prescriptions.
4. Assess patient concerns.

5. Describe proper optical dispensing techniques.
6. Acquire, evaluate, and use information from credible opticianry sources in order to make design decisions.

Course Outcome(s):

Evaluate information about current products and new technologies.

Essential Learning Outcome Mapping:

Information Literacy: Acquire, evaluate, and use information from credible sources in order to meet information needs for a specific research purpose.

Objective(s):

1. Discuss how ocular conditions pertain to spectacle design.
2. Acquire, evaluate, and use information from credible opticianry sources in order to make design decisions.
3. Identify popular, professional, and academic sources within opticianry.
4. Evaluate opticianry sources.

Course Outcome(s):

Prepare for National Opticianry Certification Examination.

Objective(s):

1. Discuss solutions to case studies.
2. Discuss how ocular conditions pertain to spectacle design.
3. Interpret ophthalmic prescriptions.
4. Assess patient concerns.
5. Describe proper optical dispensing techniques.

Methods of Evaluation:

1. Case studies
2. Round table discussion
3. Research logs
4. Oral presentations
5. Essay

Course Content Outline:

1. Optical nomenclature
2. Optical theory
 - a. Light
 - b. Prisms
 - c. Visible spectrum
 - d. Ultraviolet (UV) and Infrared (IR)
 - e. Radius of curvature
 - f. Base curve
 - g. Figuring lens power
3. Transposition
4. Figuring power at a given axis
5. Prism
 - a. Base In (BI)
 - b. Base Out (BO)
 - c. Base Up (BU)
 - d. Base Down (BD)
 - e. Cancelling prism
 - f. Compounding prism
6. Analyze and interpret prescriptions

- a. Anatomy of the eye
 - i. Refractive errors
 - 1. Myopia
 - 2. Hyperopia
 - 3. Astigmatism
 - ii. Presbyopia
 - iii. Anisometropia
 - b. Format of a prescription
 - c. Practical optics
 - i. Centration
 - ii. Optical center (OC)
 - iii. Major reference point (MRP)
 - iv. Prism
 - 1. Prescribed
 - 2. Induced
 - 3. Bicentric grind
 - v. Impact resistance
 - vi. Base curves
 - vii. Sagittal depth
 - viii. Absorption
 - ix. Indices of refraction
 - x. Reflection
 - xi. Dispersion
 - d. Relationship between the prescription and finished eyewear
 - e. Transposition
7. Frames
- a. Material
 - b. Measurements
 - i. A Measurement
 - ii. B Measurements
 - iii. Effective diameter (ED)
 - iv. Geometric center distance (GCD)
8. Limitations of prescription for visual improvement
9. Assessing patient needs
- a. Vocational needs
 - b. Avocational needs
 - c. Cosmetic needs
 - d. Frames
 - i. Material
 - ii. Availability
 - iii. Specialty frames
 - iv. Industrial frames
 - e. Lenses
 - i. Single Vision
 - ii. Multifocals
 - 1. Bifocal
 - 2. Trifocal
 - 3. Progressive
 - iii. Material
 - iv. Lens treatments
 - 1. Anti-reflective
 - 2. Photochromic
 - 3. Tints
 - 4. Roll
 - 5. Polish
10. Verification
- a. American National Standards Institute (ANSI) standards
 - i. Sphere power
 - ii. Cylinder power

- iii. Axis
 - iv. Prism
 - 1. Horizontal
 - 2. Vertical
 - v. Segment placement
 - vi. Sagittal depth
 - b. Figuring horizontal prism
 - c. Standard alignment
11. Regulatory Agencies
- a. Ohio Vision and Hearing Professionals Board
 - b. American Board of Opticianry
 - c. National Contact Lens Examiners
 - d. American National Standards Institute
 - e. Occupational Safety and Health Administration
 - f. Federal Trade Commission
 - g. Food and Drug Administration
12. Review of current optical literature
- a. Written review
 - i. Composition
 - ii. Content
 - b. Verbal review

Resources

American National Standards Institute. *Standards*. The Institute, 2020.

Brooks, C. W. (2023) *System for Ophthalmic Dispensing*, Elsevier.

DiSanto M. (2007) *Technical Options: Professional Service*, National Academy of Opticianry.

DiSanto M. (1989) *Certification Review Book*, Hudson, OH: Self Published.

National Academy of Opticianry. (2019) *Ophthalmic Dispensing Review Book*, National Academy of Opticianry.

Stoner, E. et al. (2005) *Optical Formulas Tutorial*, Elsevier.

Resources Other

- 1. 20/20 <https://www.2020mag.com/>
- 2. American Optometric Association. <https://www.aoa.org/patients-and-public/caring-for-your-vision/contact-lenses?sso=y> (<https://www.aoa.org/patients-and-public/caring-for-your-vision/contact-lenses/?sso=y>)
- 3. Centers for Disease Control and Prevention. "Healthy Contact Lens Wear and Care." <https://www.cdc.gov/contactlenses/index.html> (<https://www.cdc.gov/contactlenses/>)
- 4. Eyecare Business <https://www.eyecarebusiness.com/>
- 5. Invision <https://invisionmag.com/>
- 6. Khan Academy. <https://www.khanacademy.org/>
- 7. Ophthobook <https://timroot.com/ophthobook/>
- 8. OptiBoard Forums. <http://www.optiboard.com/forums/>
- 9. Quantum Optical. <http://www.quantumoptical.com/> (<https://www.2020mag.com/>)
- 10. Review of Optometry. <https://www.reviewofoptometry.com/>

11. Vision Professionals Board <https://vision.ohio.gov/vision-professionals/optician/3-optician> (<https://vision.ohio.gov/vision-professionals/optician/3-optician/>)

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