

OPTICAL TECHNOLOGY (OPT)

OPT-1100 Introduction to Optical Technology

1 Credit

Introduction to Cuyahoga Community College community and skills necessary for academic and professional success. Topics include personal responsibility, motivation, time management, and study skills. Overview of ophthalmic professions.

Lecture: 1 hours

Prerequisite(s): None.

OPT-1310 Theoretical Optics I

2 Credits

Study of ophthalmic and geometric optics, modern lens theory and construction as it relates to design, fitting and dispensing of spectacles and contact lenses.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to program.

OPT-1320 Theoretical Optics II

2 Credits

Study of theories of light, geometric laws of refraction, modern lens theory, and construction as it relates to finishing, surfacing, and dispensing of complex and special lens types. Includes calculation of refractive errors, corrective methods and calculating American National Standards Institute (ANSI) standards for complex ophthalmic eyewear.

Lecture: 2 hours

Prerequisite(s): OPT-1310 Theoretical Optics I.

OPT-1400 Introduction to Fabrication Principles

1 Credit

Basic understanding of ophthalmic prescriptions and lenses. Use of ophthalmic equipment to neutralize and verify single vision, multifocal, and progressive addition lenses. Introduction to the skills necessary to meet accepted opticianry standards, including laboratory safety, personal safety, and instrument maintenance.

Lecture: .5 hours. Laboratory: 1.5 hour

Prerequisite(s): Departmental approval: admission to program.

OPT-1411 Basic Spectacle Fabrication

1 Credit

Introduction to ophthalmic laboratory procedures. Basic laboratory concepts and manipulative skills required to make a pair of single-vision eyewear. Topics include the importance of laboratory safety, personal safety, and maintenance of ophthalmic machines and ophthalmic instruments.

Lecture: .5 hours. Laboratory: 1.5 hour

Prerequisite(s): OPT-1400 Introduction to Fabrication Principles or concurrent enrollment.

OPT-1421 Advanced Spectacle Fabrication

1 Credit

Advanced laboratory concepts and manipulative skills required to make a pair of single vision or segmented multifocal eyewear. Topics include laboratory safety, personal safety, and the application of machine and instrument maintenance.

Laboratory: 3 hours

Prerequisite(s): OPT-1411 Basic Spectacle Fabrication.

OPT-1510 Optical Dispensing I

3 Credits

Introduction, history, and development of modern opticianry, spectacles, and fitting procedures. Principles of interpersonal relationships. Instruction in basic frame types and parts.

Lecture: 2 hours. Laboratory: 3 hours

Prerequisite(s): Departmental approval: admission to Optical Technology program.

OPT-1520 Optical Dispensing II

3 Credits

Beginning principles of design, fitting, verification and dispensing of spectacles.

Lecture: 2 hours. Laboratory: 3 hours

Prerequisite(s): OPT-1510 Optical Dispensing I.

OPT-1610 Contact Lens I

2 Credits

Focuses on history of contact lenses, differences between hard and soft contact lenses, and physical and physiological properties of contact lenses.

Lecture: 2 hours

Prerequisite(s): Departmental approval: admission to program.

OPT-1621 Contact Lens II

2 Credits

Principles of operation and design of instruments applicable to fitting of rigid gas permeable contact lenses. Optical principles and materials applicable to design processes and relationship to physical condition and structure of the eye in its abnormal state. Discussion of the delivery of both soft and rigid gas permeable contact lenses.

Lecture: 2 hours

Prerequisite(s): OPT-1610 Contact Lens I.

OPT-1710 Introduction to Patient Care

3 Credits

Introduction to concepts and skills important to an allied health professional in the field of Ophthalmology such as ocular anatomy and physiology, patient history, and lensometry.

Lecture: 3 hours

Prerequisite(s): Departmental approval.

OPT-1721 Advanced Patient Care

2 Credits

Study of skills that are important to an Ophthalmic Assistant such as refraction, tonometry, depth perception, pupillary evaluation, and instrument maintenance. Designed to prepare the student to work within an Ophthalmology practice as well as pursue certification as an Ophthalmic Assistant.

Lecture: 1 hour. Laboratory: 2 hours

Prerequisite(s): OPT-1710 Introduction to Patient Care.

OPT-1801 ST: Intro to Optical Tech

1 Credit

This course engages students with the Tri-C community and introduces resources and skills necessary for student success. Topics will include personal responsibility, motivation, career and academic planning, time management, and study skills. Students will learn what is necessary to be successful in the ophthalmic environment, including: the ophthalmic professions and the scope of practice of each, job outlook, basic ocular anatomy, and common ocular conditions and diseases.

Lecture: 1 hours

Prerequisite(s): None.

OPT-1820 Independent Study/Research in Optical Technology
1-3 Credits

Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours

Prerequisite(s): Departmental approval, and instructor approval, and ENG-0995 Applied College Literacies, or appropriate score on English Placement Test. Note: ENG-0990 Language Fundamentals II taken prior to Fall 2021 will also meet prerequisite requirements.

OPT-1911 Ophthalmic Assisting Directed Practice
4 Credits

Application of ophthalmic assisting techniques in a clinical setting. Emphasis on records keeping, preliminary examination of the eye, cleaning and disinfection of equipment, ophthalmic pharmacology, refracting, and professionalism.

Other Required Hours: Directed Practice: 30 hours per week for the duration of 16 weeks.

Prerequisite(s): Concurrent enrollment in OPT-1721 Advanced Patient Care

OPT-2501 Optical Business
3 Credits

Covers organizations, sales, third party insurance, inventory, hiring and supervision. Interpret financial data; set sales goals; evaluate inventory control systems; attracting and retaining superior employees.

Lecture: 3 hours

Prerequisite(s): Departmental approval.

OPT-2550 Advanced Optical Dispensing Lab
1 Credit

Development of advanced dispensing techniques including troubleshooting, advanced lens design, advanced fitting theory and repair techniques.

Laboratory: 3 hours

Prerequisite(s): OPT-1520 Optical Dispensing II.

OPT-2620 Advanced Contact Lens Theory
1 Credit

This course will discuss the principles of the diagnostic fitting of contact lenses. Topics will include lens selection procedures, lens application, the evaluation of fluoresce in patterns, and the evaluation of the contact lens fit.

Lecture: 1 hours

Prerequisite(s): OPT 1621 Contact Lens II.

OPT-2650 License Review Spectacle
1 Credit

Focus on key optical concepts as they relate to spectacles with in-depth look at the domains assessed on the National Opticianry Competency Examination administered by the American Board of Opticianry.

Lecture: 1 hours

Prerequisite(s): Departmental approval.

OPT-2660 License Review Contact Lens
1 Credit

Focus on key optical concepts as they relate to contact lenses with in-depth look at theory, optical nomenclature, and test domains outlined by National Contact Lens Exam.

Lecture: 1 hours

Prerequisite(s): Departmental approval.

OPT-2702 Refractometry
2 Credits

Entry level knowledge of theory and performance of refraction as it relates to human eye. Study of ocular structures, ametropia neutralization, astigmatism, objective and subjective refraction, anomalies of vision, and clinical refraction.

Lecture: 1 hour. Laboratory: 2 hours

Prerequisite(s): OPT-1710 Introduction to Patient Care, or departmental approval.

OPT-2820 Advanced Independent Study/Research in Optical Technology
1-3 Credits

Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours

Prerequisite(s): Departmental approval, and instructor approval, and ENG-0995 Applied College Literacies, or appropriate score on English Placement Test. Note: ENG-0990 Language Fundamentals II taken prior to Fall 2021 will also meet prerequisite requirements.

OPT-2940 Optical Field Experience I
2 Credits

Supervised field experience in an ophthalmic health care setting designed to emphasize role of dispensing optician. Students gain exposure to professional practice through direct supervision by a licensed optician. Expect students to demonstrate advancing assessment skills and assume more individual responsibility as member of an ophthalmic department.

Other Required Hours: Field Experience: 24 hours per week for 16 Weeks (384 hours per semester).

Prerequisite(s): Concurrent enrollment in OPT-2971 Optical Field Experience Seminar I.

OPT-2950 Optical Field Experience II
2 Credits

Supervised field experience in a clinical ophthalmic setting designed to emphasize role of dispensing optician. Students assigned to clinical sites under direct supervision of licensed optician. Students take on advanced responsibilities and have more input into decision making process. Demonstrate advanced assessment skills in patient care and business management and assume more individual responsibility as member of optical team.

Other Required Hours: Field Experience: 24 hours per week for 16 Weeks (384 hours per semester).

Prerequisite(s): OPT-2940 Optical Field Experience I, and concurrent enrollment in OPT-2981 Optical Field Experience Seminar II.

OPT-2972 Optical Field Experience Seminar I
2 Credits

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.

Other Required Hours: Seminar: 2 hours per week.

Prerequisite(s): Concurrent enrollment in OPT-2940 Optical Field Experience I.

OPT-2982 Optical Field Experience Seminar II

2 Credits

Capstone course in Optical Technology. Integrates advanced concepts and knowledge gained from field experience into total learning process.

Focus on organization of health care delivery system. Discussions of current issues included.

Other Required Hours: Seminar: 2 hours per week.

Prerequisite(s): Concurrent enrollment in OPT-2950 Optical Field Experience II.