

# ***VISION CARE TECHNOLOGY***

## **OPHTHALMIC DISPENSING DEPARTMENT**

*“We offer 20/20 on your future”*



**NEW YORK CITY COLLEGE OF TECHNOLOGY  
CITY UNIVERSITY OF NEW YORK**

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# **VISION CARE TECHNOLOGY – BECOME AN OPTICIAN**

## **CAREER**

A licensed ophthalmic dispenser (optician) is an eye care professional who analyzes and interprets prescriptions written by either an ophthalmologist or an optometrist in order to design eyeglasses or contact lenses

The ophthalmic dispenser (optician) obtains specific patient history and selects and fits spectacles and/or contact lenses that provide patients with comfortable and effective vision correction. This process includes an in depth analysis of available lens and frame products, design materials and treatments to enhance the patient's comfort and lifestyle. The eye care practitioner may carry out administrative duties such as: office management, tracking inventory sales, eyewear fabrication, patient record keeping and insurance billing.

An ophthalmic dispenser (optician) must:

- possess the academic, technical and clinical skills to fulfill the duties and responsibilities of an eye care professional
- function well in a variety of eye care work environments
- communicate clearly in written and oral presentation
- understand the ethical responsibilities and implications of one's work and personal actions
- apply problem-solving techniques to the workplace
- protect the health, safety and welfare of the public

A licensed optician can specialize in many aspects of vision care, such as:

Vision Care Technologist

Contact Lens Practitioner

Laboratory Fabrication Optician

Optical Industry Business Professional

Luxury Eyewear and Sun Wear Dispensing

Targeted (Niche) Market Dispensing Optician

### **Vision Care Technologist**

The vision care technologist is a licensed optician who can assist specialists of ophthalmology and optometry to provide a full scope of vision care. They are likely to work in medical settings, e.g. a medical office or clinic. These eye care professional's responsibilities will likely include obtaining medical histories from patients, administering diagnostic tests, performing patient testing utilizing computerized and automated technology and assist in specialized pre and post- surgical testing. The vision care technologist must be very personable, comfortable with cutting edge technology and appreciative of the professionalism of a medical setting.

## **Certified Contact Lens Practitioner**

The licensed contact lens practitioner measures for, evaluates and selects the proper contact lens modality to correct for visual and ocular diseases of the eye as prescribed by an ophthalmologist and optometrist. Many opticians specialize in contact lenses, while others incorporate contact lens fitting into a general practice of vision care. Possible specialties of the contact lens practitioner include pediatrics, prosthetics and rigid gas permeable lenses. Fitting contact lenses requires considerable skill, care and patience. Skills required for contact lens fitting include a comprehensive knowledge of the anatomy and physiology of the eye and specialized instrument procedures. Additional certification is needed to fit contact lenses in New York State.

## **Laboratory Fabrication Optician**

The laboratory optician fabricates the prescription, specifies stock selection of lenses and frames, formulates lens specifications and performs all technical functions in the making of eyewear. The laboratory optician, also called an ophthalmic laboratory technician, usually has little contact with the public. He or she still needs to possess the managerial skills and communication skills of a dispensing optician. He or she needs to have supervisory and communication skills to work with the personnel on the sales floor and in the wholesale laboratories

## **Optical Industry Business Professional**

The vision care industry worldwide needs sales, management, service and consulting personnel. The associate degree in vision care technology will be invaluable in obtaining these business positions in that it provides familiarity with the optical industry to business minded people.

## **Targeted Market Dispensing Optician**

Some dispensing opticians exclusively service certain markets with specific optical products. There are many interesting and lucrative markets. Examples are dispensers of luxury eyewear, sun wear, sports eyewear, occupational and safety glasses, pediatric, geriatric and low vision optical aids. Specialized Dispensing Opticians should enjoy working within their chosen market and have the technical knowledge to understand and provide for the patient's optical needs with appropriate optical products.

## **Additional Career Opportunities include:**

- Manager of Ophthalmology Practice/Clinic
- Manager of Optometry Practice/Clinic
- Independent Owner of a Retail Optical Store
- Manager of Retail Optical Store
- Manufacturer's Representative
- Ophthalmic Educator
- Ophthalmic Salesperson
- Contact Lens Salesperson
- Wholesale Laboratory Manager
- Laboratory Fabrication Technician

## Transfer Opportunities include:

CUNY BA program – Business Management

Bachelor of Science Degree in Health Services Administration

Pre-Optometry

At New York City College of Technology’s Vision Care Technology Department, the program is designed to provide students with the high level of skills needed in today’s challenging job market. We are a bridge to a career.

The Department of Vision Care Technology is the only nationally accredited opticianry curriculum within the City University of New York. The department is equipped with the latest state of the art equipment and is the largest opticianry program in the nation. The associate degree in ophthalmic dispensing prepares a student for national certification and New York State licensure. The graduate of the associate degree program is eligible to take national examinations administered by the ABO (American Board of Opticianry) and NCLE (National Contact Lens Examination).

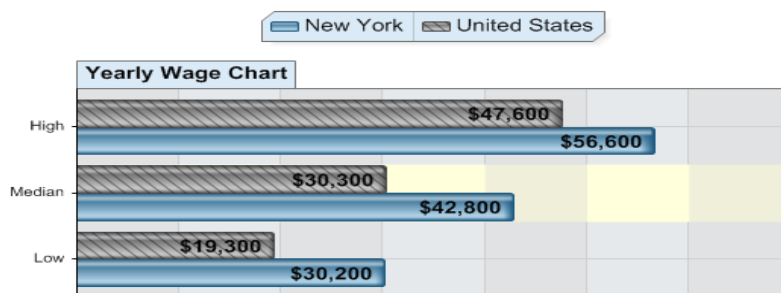
In the last three years, our pass rates for the ABO (American Board of Opticianry) have varied from 82% - 95%. In addition, our pass rates for the NCLE (National Contact Lens Examiners) have been in the 85% - 100% percentile. Our New York State Board Practical pass rates for the last three years have been in the range of 40% - 100%.

*Only an associate degree in ophthalmic dispensing from a program accredited by the Commission on Opticianry Accreditation will qualify graduates to take other state board licensing examinations.* Many of our graduates enroll in the CUNY BA/BS program and major in areas such as business or science. A number of graduates enroll in the BA program in Health Services Administration.

Ophthalmic dispensers (optician) practice their profession in a variety of professional settings such as retail optical stores, private ophthalmology and optometry offices, hospital clinics and wholesale optical companies.

Ophthalmic Dispensers (Optician) are in great demand. Recent U.S. government statistics indicate that as baby boomers reach middle age and the percentage of middle-aged and elderly people increases, so will these individuals need for corrective eyewear.

New York City College of Technology’s Vision Care Technology Department is committed to offering cutting edge technology in order to meet the current and future needs of the ophthalmic profession. The average entry-level salary for a fully licensed graduate in a full time position is \$35,000 to \$40,000. Salary range also depends on other qualifications an individual brings to the work setting. Sales experience, computer literacy and/or business skills can increase the candidate’s salary. Annual salaries for experienced licensed opticians in a full time position can range from \$56,600 – \$60,000. A licensed optician who may want to open his or her own professional practice will make considerably more money annually.



## VISION CARE TECHNOLOGY PROGRAM

The Department of Vision Care Technology/New York City College of Technology is a fully accredited member of the Middle States Association of Colleges and Schools. In addition, the Commission on Opticianry Accreditation also accredits the department. Successful completion of our degree program qualifies the graduate to sit for national and state certification and licensure in the ophthalmic field.

Our faculty is comprised of fully licensed and accredited opticians with advanced degrees. They are nationally and internationally known experts and speakers in ophthalmics and have published papers and articles on related topics. They have a strong relationship with the ophthalmic community and similarly strong relationships between faculty and students are encouraged.

The ophthalmic dispensing associate degree in applied science (AAS) curriculum is segmented into four components: ophthalmic materials and fabrication, anatomy of the eye, contact lenses and ophthalmic dispensing. All courses are currently offered in both day and evening sessions.

Each of our ophthalmic dispensing courses is a carefully developed balance of theory and laboratory experiences. The theory sessions provide knowledge in optics, materials and properties of lenses, frame components, ophthalmic anatomy, edging techniques and contact lenses. The laboratory or clinical setting provides hands-on experience in fabrication and fitting eyewear, fitting and dispensing contact lenses, and working with patients in our on-campus optical shop.

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Courses in biology, math, English composition and communication are required elements of the ophthalmic dispensing associate degree program. They provide basic scientific knowledge as well as the mathematical and writing skills necessary to understand and communicate the elements of Vision Care Technology. In addition, associate degree students must take three elective courses and may choose from a variety of subjects. *All students must be certified in computer literacy; the college offers an introduction course in computer basics to satisfy this requirement.*

Our ophthalmic facilities are well equipped, state of the art laboratories and clinics. Our contact lens laboratory has six stations with professional patient chairs, bio-microscopes, keratometers, refracting instruments and a video screen bio-microscope to enhance clinical teaching.

Our fully supplied and operational eye glass dispensing clinic offers hands-on experience with fitting and dispensing eyewear under the supervision of licensed faculty. We have clinical optometrists on staff that provides eye examinations to the local community in order to supply patients for clinical practice.

Our ophthalmic lens-fabricating laboratory has sixteen stations fully equipped with the latest in ophthalmic technology. Students work with all aspects of lens materials and frame design, honing their skills to create finished eyewear products.

## DEGREE REQUIREMENTS

Upon successful completion of the required 62 credits of coursework, New York City College of Technology will grant an Associate in Applied Science degree (AAS) with a major in ophthalmic dispensing. Below is the list of required courses totaling the 62 credits required.

<b>Course Number</b>	<b>Course Title</b>	<b>Credits</b>
VCT1101/OD101	Ophthalmic Materials and Lab I	3.0
VCT1105/OD105	Principles of Optics	3.0
VCT1201/OD201	Ophthalmic Materials and Lab II	3.0
VCT1212/OD212	Anatomy and Physiology of the Eye	4.0
VCT1237/OD237	Contact Lenses I	3.0
VCT2311/OD311	Ophthalmic Materials and Lab III	2.0
VCT2313/OD313	Ophthalmic Dispensing I	5.0
VCT2316/OD316	Ophthalmic Dispensing Clinic I	1.0
VCT2327/OD327	Contact Lenses II	5.0
VCT2413/OD413	Ophthalmic Dispensing II	5.0
VCT415/OD415	Introduction to Principles of Refraction	3.0
VCT2416/OD416	Ophthalmic Dispensing Clinic II	1.0
VCT2427/OD427	Contact Lenses III	4.0
BIO1101/BY101	Biology and Laboratory	4.0
MATH1180/MA180	Mathematical Concepts and Applications	4.0
ENG1101/EG101	English Composition I	3.0
LAP	(Core) Philosophy/Aesthetics/Literature	3.0
BS/SS	(Core) Behavioral or Social Science	3.0
COMM	(Core) Communication	3.0
<b>TOTAL CREDITS</b>		<b>62.0</b>

## VISION CARE TECHNOLOGY COURSES (OD)

### VCT1101/OD101 Ophthalmic Materials and Laboratory I\*

An introduction to the didactic and laboratory concepts involved in the identification, location and fabrication of prescription ophthalmic eyewear. Emphasis is placed on single vision physical and optical lens characteristics, physical frame and design characteristics including: lens materials, index of refraction, spherical, cylindrical power and axis location. In addition, lens power transposition, lens cross, ophthalmic standards, diopter power formula, focal length, total lens power, relationship of radius of curvature and index of refraction and lens makers equation will be covered.

Prerequisite: CUNY certification in reading and mathematics

Corequisite: MATH1180/MA180 or higher

2 cl hrs, 3 lab hrs, 3 cr.

\*Credit by examination available for this course with permission of the department.

### VCT1105/OD105 Principles of Optics I\* (\*\*)

A study of the basic concepts and principles of light, physical characteristics and geometric properties of optics, rectilinear propagation of light and shadows, reflection of light at planes and spherical surfaces, effect of prism on the transmission and deviation of light and thin lens design theory and application will be covered.

Prerequisite: CUNY certification in reading, writing and mathematics

Corequisite: MATH1180/MA180 or higher

3 cl hrs, 3 cr.

\*Credit by examination available for this course with permission of the department.

\*\* Writing Intensive Course

### VCT1201/OD201 Ophthalmic Materials and Laboratory II

A continuation of the didactic and laboratory concepts involved in the identification, location and fabrication of prescription ophthalmic eyewear. Emphasis is placed on the calculated effects of prism using a single vision lens power and achieving prism through centration of optical centers. Identifying various ophthalmic lens-manufacturing techniques of factory finish, surfacing and casting methods to achieve lens powers, sphere and toric base curves will be covered. Multifocal lens and progressive lens characteristics are introduced including powers, design, material, lens profiles, lens blank size, frame size and patient PD. In addition, continued application of ophthalmic standards of ANSI Z80.1, Z80.5 and ANSI Z87 is emphasized.

The laboratory component focuses on the practical aspect of identification, measuring and fabrication of ophthalmic projects that require wanted prism and fabrication of multifocal lens designs that incorporate patient distant and near PDs.

Prerequisite: VCT1101/OD101

2 cl hrs, 3 lab hrs, 3 cr.

### VCT1212/OD212 Anatomy and Physiology of the Eye

A study of the structure and function of the eye, bones of the orbit; cranial nerves in the visual system, lid physiology, tear film chemistry, corneal anatomy and function, corneal metabolism, uveal layer, lens accommodation mechanism, retina, photochemistry of vision, visual pathway and extraocular muscles and motility will be covered. In addition, ocular pathologies, anomalies, deficiencies, etiology and treatment, eye examination and ancillary tests for visual screening and ocular pharmacology will also be discussed.

Prerequisites: CUNY certification in reading and writing

4 cl hrs, 4 cr.

### VCT1237/OD237 Contact Lenses I

A study of the history and development of contact lenses, physical characteristics of various types of contact lenses, comparison of materials, contact lens nomenclature, ANSI specifications, corneal topography and astigmatism. The laboratory develops skills in the radiuscope, profile analyzer, diameter and thickness gauges, measuring magnifier, lensometer, introduction to biomicroscopy and keratometry.

Prerequisites: CUNY certification in reading, writing and mathematics

VCT1101/OD101

2 cl hrs. 3 lab hrs., 3 cr

### VCT2311/OD311 Ophthalmic Materials and Laboratory III

Advanced didactic and laboratory concepts involved in the selection, identification, location and fabrication of prescription eyewear. Lens aberrations and characteristics based on index of refraction and lens power is covered. Emphasis is place on special procedures used in the material and fabrication of rimless, semi-rimless, nylon suspension and drill mounted lenses. In addition, ANSI Z87.1 safety frames, ASTM F803 sports frames and ASTM F8003 are covered.

The laboratory component focuses on the advanced practical aspect of fabrication of lenses and frames, fabrication of rimless, semi-rimless, nylon suspension and drilled mounted lenses. Repairs and customization of frames are also covered.

Prerequisites: CUNY certification in reading, writing and mathematics

VCT1201/OD201

1cl hr, 3 lab hrs, 2 cr.

### VCT2313/OD313 Ophthalmic Dispensing I\*\*\*

A study of the origin, ethics, practices and responsibilities of the Ophthalmic Dispenser will be discussed. The course will explore the optical and physical characteristics of corrective lenses. The development of corrected curves and aspheric design will be detailed. Factors that affect the ophthalmic prescription, such as vertex distance, lens tilting and magnification will be explained. The design and application of multifocals will be presented. Anatomical and physiological landmarks of the eye will be discussed and the fitting triangle concept will be developed and detailed. The development of the emmetropic eye will be presented and a thorough presentation of ametropias. Measurement of visual acuity will be detailed. An in-depth presentation of both single vision and presbyopic analysis will be covered. The laboratory sessions provide for an application of the theoretical knowledge presented in the lecture. The sessions present the students with the skills necessary at the dispensing table with patients. Malpractice insurance is required. Prerequisites: VCT1105/OD105, VCT1201/OD201, VCT1212/OD212; corequisite:

VCT2311/OD311

4 cl hrs, 3 lab hrs, 5 cr.

### VCT2316/OD316 Ophthalmic Dispensing Clinic I\*\*\*

An internship course designed to develop the student's clinical ophthalmic dispensing skills. The structure of a basic functioning clinic is detailed. The basic groundwork for patient management and ethical business practice is demonstrated. The students exercise their technical skills with clinical patients under the direct supervision of the clinical instructor. Malpractice insurance is required.

Prerequisites: VCT1201/OD201, VCT1105/OD105, VCT1212/OD212, VCT1237/OD 237

Corequisites: VCT2313/OD313, VCT2311/OD311, VCT2327OD 327

3 cl hrs, 1 cr

### VCT2327/OD327 Contact Lenses II\*\*\*

The study of anatomy, physiology and pathology of the anterior segment and related structures, theory of flexible and non-flexible lens fitting, philosophies and optics of contact lenses. In addition, the theory and fitting of soft lenses and contact lens solutions will be covered. The laboratory develops skills in keratometry, biomicroscopy illuminations, and the fitting of soft lenses. Malpractice insurance is required.

Prerequisites: VCT2327/OD237, VCT2212/OD212, VCT1201/OD201, BIO1101/BY101

4 cl hrs, 3 lab hrs, 5 cr

### VCT2413/OD413 Ophthalmic Dispensing II\*\*\*

A presentation of the national certification and state licensing requirements will be given. Lifestyle dispensing consideration will be detailed with the goal of meeting a patient's eyewear needs. Consideration will be given to analyzing complex prescriptions. The information presented will enable the practitioner to determine proper lens design recommendations for a patient's occupational and avocational needs. Lens extras such as absorptive tints and coatings will be discussed. Cataract surgery and visual correction options will be presented. Managed care will be discussed. *The New York State Ophthalmic Dispensing Guide to Practice* will be detailed and professional liability will be stressed. A detailed section on preparation for national certification and state licensing will be presented. The laboratory sessions provide for an application of the theoretical knowledge presented in the lecture. The sessions present the students with the skills necessary at the dispensing table with the patient.

Prerequisites: VCT2313/OD313

4 cl hrs, 3 lab hrs, 5 cr.

### VCT2415/OD415 Introduction to Principles of Refraction

An introduction to the study of clinical refraction of the eye. Topics include: etiology, types, causes, symptoms, testing and treatment of eye abnormalities; accommodation and presbyopia; versions and vergences; anisometropia and aniseikonia; external examination, preliminary subjective test; retinoscopy, low vision aids; twenty-one point refractive examination.

Prerequisite: VCT2313/OD313

3 cl hrs, 3 cr

### VCT2316/OD416 Ophthalmic Dispensing Clinic II\*\*\*

An internship course designed to increase the basic clinical skills that have been acquired in Ophthalmic Dispensing Clinic I (VCT2316/OD316). Under the supervision of a clinical instructor, the interns operate a full service ophthalmic dispensing clinic. Malpractice insurance is required.

Prerequisites: VCT2313/OD313, VCT2316/OD316

Corequisite: VCT2413/OD413

3 cl hrs, 1 cr

### VCT2427/OD427 Contact Lenses III\*\*\*

A comparison of spectacles vs. contacts, calculation of residual astigmatism, office procedure and office management and contact lens symptomology are discussed. In addition, the advanced fitting concepts Of RGP lenses, astigmatic contact lenses, scleral lenses, therapeutic lenses and pediatric contact lens fitting are discussed. The laboratory continues development in the fitting of soft lenses and patient instruction and follow-up with patients. Rigid lens fitting, insertion and removal techniques, patient instruction and fluorescein pattern evaluation will be covered. Malpractice insurance is required.

Prerequisite: VCT2327/OD 327  
3 cl hrs, 3 lab hours, 4 cr.

\*\*Courses where malpractice insurance is required, students will not be permitted in lab or clinic without proof of malpractice insurance. Students are required to purchase malpractice insurance during the first week of the semester. A procedural handout will be distributed in class for purchasing insurance.

### FRESHMAN APPLICANTS

Students applying for admission to New York City College of Technology for the Vision Care Technology program will be accepted on the following basis:

- ◆ High School Diploma or Equivalency
- ◆ CUNY certification in reading, writing and mathematics

### TRANSFER STUDENTS

Students who wish to transfer into Vision Care Technology from other curricula within the college will be accepted into our program when they have satisfactorily met all prerequisites requirements.

Students who wish to transfer into Vision Care Technology from other colleges will be accepted on the following basis:

- ◆ CUNY certification in reading, writing and mathematics
- ◆ or twelve or more college credits and a GPA of at least 2.5.

### FURTHER INFORMATION

Prospective students who wish to have more personalized information or would like a tour of the department should call (718) 260-5298 or email Professor Russo, chairperson, at [rrusso@citytech.cuny.edu](mailto:rrusso@citytech.cuny.edu).

The full time faculty and staff in the Department of Vision Care Technology are:

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You can also access college information by visiting the college website at: [www.citytech.cuny.edu](http://www.citytech.cuny.edu). Once you bring up the website, click on academics, then click on Vision Care Technology.

**ADMISSIONS OFFICE (718) 260-5500**