

**J. Sargeant Reynolds Community College  
School of Nursing & Allied Health**



# **OPTICIANRY**

**Information Package**

**A.A.S. Degree Program  
&**

**Opticians Apprentice Career Studies Certificate**

**A Program Leading to a  
Rewarding Career in Vision Care**



## **WELCOME TO J. SARGEANT REYNOLDS COMMUNITY COLLEGE'S OPTICIANRY PROGRAM**

Welcome and thank you for your interest in the Opticianry Programs at J. Sargeant Reynolds Community College. We hope you will find the following information beneficial. This packet contains information about the Opticianry program, the field of Opticianry, and specific information concerning the Opticianry Program. Use this to familiarize yourself with the opticianry programs and the optical profession. This Opticianry information packet also contains information about the Virginia Opticians Board licensing requirements.

General information about J. Sargeant Reynolds Community College can be found at the college website [www.reynolds.edu](http://www.reynolds.edu)

The Opticianry program offers courses during the day, evenings and on the internet. Courses are offered in both the degree program and the Opticians Apprentice Career studies certificate program. The courses from the career studies certificate are transferable into the degree program.

The faculty wishes you much success in your academic pursuit of an associate degree or career studies certificate in Opticianry.

If you need assistance of any kind, do not hesitate to ask one of the Opticianry faculty members.

Kristina Ostrom, ABO-AC FCLSA, Program Director  
PO Box 85622  
Richmond, VA. 23285-5622  
kostrom@reynolds.edu  
Office: 558 Downtown campus  
Phone: 804-523-5415

## PROGRAM DESCRIPTION

The program is accredited by the Southern Association of Colleges and Schools. The program is nationally accredited by the Commission on Opticianry Accreditation. J. Sargeant Reynolds Community College Opticianry Program is a member of the National Federation of Opticianry Schools.

The Opticianry degree program is a two-year, five semester curriculum that is designed to prepare individuals in the art and science of all phases of the making and fitting of eyeglasses and contact lenses.

Graduation from the program may lead to one of the following occupational goals: optician, private practitioner, ophthalmic dispenser, optical laboratory manager, contact lens technician, branch manager, optical laboratory technician, ophthalmic sales representative, ophthalmic research technician, instructor in ophthalmic dispensing.

Completion of the Opticianry Program results in the conferring of the Associate in Applied Science Degree in Opticianry and prepares the student for the licensing examinations required in Virginia and most other states. The courses give a basis for many different employment opportunities in the optical field, but is designed to provide the education needed to have a successful career as an **OPTICIAN**.

## PROGRAM MISSION STATEMENT

The mission of the J. Sargeant Reynolds Community College Opticianry Program is to provide quality training and instruction in the profession of Opticianry resulting in an Associate in Applied Science Degree. As an equal opportunity institution, JSRCC welcomes all and encourages its students to seek excellence in their studies. The program further encourages the students to learn to conduct an ethical professional practice of Opticianry in order to provide a superior standard of care for the people of the State of Virginia.

## PROGRAM GOALS

The goals of the J. Sargeant Reynolds Community College Opticianry Program were developed in concert with the program's philosophy and the mission and goals of the college.

1. To upgrade the profession of Opticianry through formal opticianry education. Adding to the profession men and women who are well qualified to interpret prescriptions, fabricate eyewear, dispense spectacles and contact lenses, communicate effectively, utilize sales techniques, and are self confident to serve the visual needs of the public.
2. To stimulate growth and development of the Opticianry student into a responsible, competent, enthusiastic, professional who maintains environmental and ethical standards, and works well with other professionals in his/her field.
3. To prepare graduates for entry level employment in the optical field.
4. To prepare Opticianry students for successful completion of national certification and/or state licensing exams.

## OVERVIEW OF THE OPHTHALMIC PROFESSION

***OPTICIAN*** - a professional who has the responsibility for the dispensing of eyewear, including spectacles, contact lenses, low-vision aids, and accessories. The optician may fabricate, verify, and fit eyeglasses, contact lenses and other optical devices upon the written prescription of a medical doctor or doctor of optometry. Once presented with this prescription, an optician is responsible for analyzing and interpreting the prescription to determine the lenses that are best suited to the patient's lifestyle and visual needs. Frame selection, including size and material, is then chosen. The optician takes measurements to insure proper lens placement in the frame, and must verify the accuracy of the finished product. The glasses are adjusted to the patient by the optician at the time of delivery. Other duties include occasional adjustments to retain proper fit, replacements, and repairs of lenses and frames.

***OPTOMETRIST*** - Doctors of Optometry (O.D.) are the primary health care professionals for the eye. Optometrists examine, diagnose, treat, and manage diseases, injuries, and disorders of the visual system, the eye, and associated structures as well as identify related systemic conditions affecting the eye.

***OPHTHALMOLOGIST*** - A Doctor of Medicine (M.D.) specializes in examining and treating any disease of the eye. In addition to writing prescriptions for spectacles and contact lenses, the Ophthalmologist treats eye diseases with drugs and surgery.

***OPHTHALMIC TECHNICIAN*** - A certified ophthalmic technician is a professional who performs pre-test, pre-screening, medical history, and office management for the Ophthalmologist.

***OPTOMETRIC TECHNICIAN*** - The optometric technician is a person trained to assist an Optometrist. Their duties consist of office skills, data collection, help in various pre-tests, fit and adjust the doctor's patient's eyeglasses.

## **Becoming a Licensed Optician in the state of Virginia**

According to the Virginia Board of Opticians Rules and Regulations

Part 1 Entry 18 VAC 100-20-10 section 5.

An applicant has to complete one of the following education requirements:

1. An approved two-year course in a school of opticianry, including the study of topics essential to qualify for practicing as an optician; or
2. A three-year apprenticeship with a minimum of one school year of related instruction or home study while registered in the apprenticeship program in accordance with the standards established by the State Department of Labor and Industry Division of Apprenticeship Training and approved by the Virginia State Board for Opticians

The apprentice related instruction for Virginia Optician Apprentices comes in three forms.

All three methods are approved by the State Board for Opticians and the State Apprenticeship Council.

1. Instruction at the local technical center.
2. Home study course.
3. Apprentice Career Studies certificate from J. Sargeant Reynolds Community College via distance education ( internet). Students who elect this method of related instruction must still register with the department of labor as an apprentice. The college has no control over the required hours of on the job training.

J. Sargeant Reynolds Community College Opticianry Program 804 -523-5415

Department of Labor Apprentice Training - 804 - 786-2382

Virginia Board for Opticians 804-367-8505

# AAS Degree OPTICIANRY CURRICULUM

## CURRICULUM

COURSE	TITLE	LEC. HRS.	LAB. HRS.	CRS. CRE.
STD 100	College Success Skills	1	0	1
MTH 120	Introduction to Mathematics	3	0	3
OPT 150	Optical Laboratory Theory I	3	0	3
OPT 152	Optical Laboratory Clinical I	0	6	3
OPT 121	Optical Theory I	3	0	3
—	Health or Physical Education Elective	<u>0-2</u>	<u>0-4</u>	<u>2</u>
	Total	10-12	6-10	15
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ITE 115	Basic Computer Literacy	3	0	3
OPT 151	Optical Laboratory Theory II	3	0	3
OPT 153	Optical Laboratory Clinical II	0	6	3
OPT 122	Optical Theory II	3	0	3
ENG 111	College Composition I	<u>3</u>	<u>0</u>	<u>3</u>
	Total	12	6	15
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OPT 154	Optical Business Management	3	0	3
OPT 160	Optical Dispensing Theory I	3	0	3
OPT 165	Optical Dispensing Clinical I	0	4	2
OPT 273	Contact Lens Theory I	<u>3</u>	<u>0</u>	<u>3</u>
	Total	9	4	11
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ENG 112	College Composition II	3	0	3
OPT 260	Optical Dispensing Theory II	3	0	3
OPT 271	Optical Dispensing Clinical II	0	12	3
OPT 274	Contact Lens Theory II	3	0	3
OPT 105	Anatomy, Physiology, and Pathology of the Eye	<u>3</u>	<u>0</u>	<u>3</u>
	Total	12	12	15
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OPT 253	Current Optical Trends	2	0	2
OPT 280	Contact Lens Clinical	0	6	3
OPT 272	Optical Dispensing Clinical III	0	12	3
—	Social Science Elective	<u>6</u>	<u>0</u>	<u>6</u>
	Total	8	18	14
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Total Minimum Credits for AAS Degree in Opticianry				70

## Opticians Apprentice Career Studies Certificate

**Purpose:** Successful completion of the Opticians Apprentice Career Studies Certificate will prepare students for employment in the eye care field throughout the Commonwealth of Virginia. This program is designed to develop basic essential knowledge and performance skills necessary to function as an optician.

**Occupational Objectives:** Students who successfully complete this career studies certificate program and complete the 6000 hours of on-the-job training, as a registered apprentice will be eligible to sit for the licensure examination to become a licensed optician in the State of Virginia. Students must register with the department of labor as an apprentice optician. The college doesn't do this. Contact the Virginia Department of Labor Apprentice Training.

**Admission Requirement:** General college curricular admission.

**Program Notes:** In addition to the general college curricular admission requirements, an interview with the Opticianry program head is required before beginning the curriculum. Students must be registered as an Apprentice Optician with the Virginia Department of Labor. This career studies certificate program may be completed in three years. To be awarded the Opticians Apprentice Career Studies Certificate, students are required to complete 2000 hours of on-the-job training per year, for a total of 6000 hours, along with the required courses. Students will be required to repeat any OPT course in which a grade lower than "C" is received.

CURRICULUM					
			LEC.	LAB.	CRS.
COURSE		TITLE	HRS.	HRS.	CRE.
OPT	150 <sup>1</sup>	Optical Laboratory Theory I	3	0	3
OPT	121	Optical Theory I	3	0	3
OPT	152	Optical Laboratory Clinical I	0	6	3
OPT	122	Optical Theory II	3	0	3
OPT	160 <sup>2</sup>	Optical Dispensing Theory I	3	0	3
OPT	165	Optical Dispensing Clinical I	0	4	2
OPT	105	Anatomy, Physiology, and Path of Eye	3	0	3
OPT	143	Optical Business Topics	1	0	1
OPT	260	Optical Dispensing Theory II	3	0	3
---	---	Approved General Education Elective	3	0	3
		Total	22	10	27

<sup>1</sup>OPT 150 is the introductory course for finishing and surfacing laboratory work. This course is required to be taken in conjunction with Opt 152 (Optical Laboratory Clinical I).

<sup>2</sup>OPT 160 is the introductory course for all ophthalmic dispensing work. This course is required to be taken in conjunction with OPT 165 (Optical Dispensing Clinical I).

<sup>4</sup>Selection of a course to fulfill the general education elective requirement must be approved by the academic division administering the program.

## LEARNING OUTCOMES

The learning outcomes for a graduate of the Opticianry Program should include but are not limited to the following:

1. Define the scope of practice of opticians, optometrists, ophthalmologist and other eyecare professionals.
2. Explain the history of lenses, eyeglasses and Opticianry.
3. Describe how glass and other optical lens materials are manufactured.
4. Explain the theories of light and the electromagnetic spectrum.
5. Analyze the ophthalmic prescription and its parts.
6. Explain the application and use of the lens cross and flat transposition.
7. Describe the refractive errors and their correction.
8. Explain the process of measuring visual acuity.
9. Identify the use and parts of the lensometer.
10. Determine the power of the cylinder away from the axis.
11. Explain prism and how it affects the patient.
12. Explain Snell's Law and the index of refraction.
13. Explain and demonstrate the steps of the ophthalmic finishing process.
14. Explain and demonstrate the uses of the lensometer.
15. Explain basic record keeping procedures.
16. Identify frame adjustment tools.
17. Describe techniques of hardening glass lenses, and policies of FDA and ANSI regarding testing of impact resistance.
18. Explain proper laboratory and workshop safety procedures.
19. Explain proper handling and techniques for proper environmental handling of optical substances and waste products.
20. Describe the specialized application of aphakic lenses.
21. Define and explain presbyopia and the different lens forms used for correction.
22. Demonstrate skills in prescription interpretation and analysis.
23. Apply ANSI standards to ophthalmic eyewear.
24. Describe the procedures used in surfacing lenses.
25. Explain the applications of specialty lenses.
26. Demonstrate an understanding of lifestyle dispensing.
27. Demonstrate clinical dispensing skills.
28. Understand clinical management skills.
29. Explain effective communication skills both verbal and written within the optical industry.
30. Understand basic optical management procedures.
31. Describe the use of absorptive lenses.
32. Understand proper base curve selection.
33. Calculate lens edge and center thickness.
34. Define and describe the parts, styles and materials of current spectacle frames.

35. Explain the boxing and datum systems of measuring frames and how to interpret frame markings.
36. Execute accurate monocular and binocular interpupillary measurements.
37. Describe the six major types of lens aberrations and how they affect vision.
38. Analyze the special needs of the high myope and high hyperope to include lenses and frames and etc.
39. Explain properties of visible and invisible light.
40. Calculate and correct vertical prism at the reading level.
41. Explain and demonstrate basic bench alignment.
42. Describe and demonstrate basic frame adjustments.
43. Demonstrate how to take accurate bifocal, trifocal and progressive height measurements.
44. Demonstrate the skills of ordering and processing prescription eyewear.
45. Understand ethical professional conduct for opticians.
46. Understand the lens coating processes.
47. Understand the use of current technology at work in the ophthalmic field.
48. Understand the need for basic equipment maintenance and repair.
49. Demonstrate basic frame repairs.
50. \*Demonstrate a basic understanding of the history and development of contact lenses.
51. \*Describe the nomenclature of contact lenses.
52. Understand the theory behind the corneal/lens relationship.
53. \*Understand the physiological parameters for fitting contact lenses.
54. \*Demonstrate proper insertion and removal of contact lenses.
55. \*Understand basic contact lens fitting problems and their solutions.
56. \*Operate the instruments necessary for contact lens verification and fitting.
57. \*Demonstrate the proper care and handling of contact lenses.
58. \*Explain how to modify and rigid contact lenses.
59. \* Understand the human optical system and ocular anatomy
60. Demonstrate product knowledge and understanding of the diverse uses of optical products.
61. \* currently not required in the career studies certificate program

## OPTICIANRY COURSE DESCRIPTIONS

### **OPT 121 Optical Theory I (3 cr.)**

Introduces theory and application of ophthalmic lenses. Presents history, basic manufacturing and quality standards of ophthalmic lenses, propagation of light, refraction and dioptric measurements, true power, surface power, nominal lens formula. Explains lens makers' equation, boxing system, spherical lens design, fundamental aspects of cylindrical lenses, spherocylinder lens design, and flat and toric transposition. Lecture 3 hours per week.

### **OPT 122 Optical Theory II (3 cr.)**

Explores the development of multifocal lenses, application of multifocal lenses, survey of current ophthalmic lens, the properties of spherocylinder lenses, and an in-depth analysis of the optics of ophthalmic prisms. Prerequisite: OPT 121. Lecture 3 hours per week

### **OPT 143 Optical Business Topics (1 cr.)**

Introduces the student to the management aspect of the optical industry. Topics include inventory purchasing, pricing theories, personnel issues, record keeping, ethics, and legal issues facing the optical industry. Lecture 1 hour per week.

### **OPT 150 Optical Laboratory Theory I (3 cr.)**

Introduces the student to the terminology, instruments, lens, frames, and materials used in the surfacing and finishing of optical prescription eyewear. Presents personal and environmental safety issues. Corequisite: OPT 152. Lecture 3 hours per week.

### **OPT 151 Optical Laboratory Theory (3 cr.)**

Covers making eyeglasses with advanced prescriptions and frames. Includes verification and neutralization techniques for single vision lens and bifocals, frame repair, accomplishing prescribed prism by decentration, verification and neutralization, semi-rimless glasses, and multifocal glasses. Prerequisites: OPT 150 and OPT 152 or equivalent. Corequisite: OPT 153. Lecture 3 hours per week.

### **OPT 152 Optical Laboratory Clinical I (3 cr.)**

Provides the clinical component of Optical Laboratory Theory I. Provides students the opportunity to learn clinical skills in fundamental optical laboratory tasks at the entry level under the direction and supervision of a preceptor. Emphasizes accuracy and attaining skills that meet acceptable professional standards. Corequisite: OPT 150. Laboratory 6 hours per week.

### **OPT 153 Optical Laboratory Clinical II (3 cr.)**

Provides the clinical component of Optical Laboratory Theory II. Presents students with an opportunity to learn clinical skills for optical laboratory tasks at the advanced level under the direction and supervision of a preceptor. Emphasizes accuracy and the attainment of skills that meet acceptable professional standards. Prerequisites: OPT 150 and OPT 152 or equivalent. Corequisite: OPT 151. Laboratory 6 hours per week.

### **OPT 154 Optical Business Management (3 cr.)**

Covers basic management and leadership skills necessary for a successful eye care office. Teaches the analysis, creative thinking, judgment, planning strategy, and implementation skills necessary for today's optical business challenges. Lecture 3 hours per week.

### **OPT 160 Optical Dispensing Theory I (3 cr.)**

Introduces the student to the skills necessary for becoming a dispensing optician. Includes the history of the profession, patient/client measurements, frame and lens materials, frame and lens selection, prescription analysis, and adjustment techniques. Prerequisite: OPT 121 or equivalent. Corequisite: OPT 165. Lecture 3 hours per week.

**OPT 165 Optical Dispensing Clinical I (2 cr.)**

Provides the student with an opportunity to develop the skills necessary for becoming a dispensing optician. Covers patient/client measurements, frame and lens materials, frame and lens selection, prescription analysis, and adjustment techniques. Serves as the clinical component of Optical Dispensing Theory I. Prerequisite: OPT 121 or equivalent. Corequisite: OPT 160. Laboratory 4 hours per week.

**OPT 253 Current Optical Trends (2 cr.)**

Presents current trends in the optical profession. Examines the impact of new materials, new health care issues, and medical advances as they relate to the visual needs and wants of society. Prerequisite: OPT 260 and OPT 271 or equivalent. Lecture 2 hours per week.

**OPT 260 Optical Dispensing Theory II (3 cr.)**

Focuses on the development and refinement of the skills necessary for students to become a licensed dispensing optician, including patient/client measurements, frame and lens materials, frame and lens selection, prescription analysis, and adjustment techniques. Prerequisites: OPT 160 and OPT 165 or equivalent. Corequisite: OPT 271. Lecture 3 hours per week.

**OPT 271 Optical Dispensing Clinical II (3 cr.)**

Focuses on the development and refinement of the skills necessary for students to become a licensed dispensing optician, including patient/client measurements, frame and lens materials, frame and lens selection, prescription analysis, and adjustment techniques. Serves as the clinical component of Optical Dispensing Theory II. Prerequisites: OPT 160 and OPT 165 or equivalent. Corequisite: OPT 260. Laboratory 9 hours per week, 4 of the hours per week will be done at a clinical rotation site.

**OPT 272 Optical Dispensing Clinical III (3 cr.)**

Focuses on the development and refinement of the skills necessary for students to become a licensed dispensing optician, including patient/client measurements, frame and lens materials, frame and lens selection, prescription analysis, and adjustment techniques. Prerequisites: OPT 260 and OPT 271 or equivalent. Laboratory 9 hours per week, 4 of the hours per week will be done at a clinical rotation site.

**OPT 273 Contact Lens Theory I (3 cr.)**

Introduces basic concepts and techniques of contact lens fitting, contact lens design, contact lens materials, and contact lens nomenclature. Covers contact lens insertion and removal techniques, and basic slit lamp and keratometry skills. Prerequisites: NAS 176 or OPT 105 or equivalent. Lecture 3 hours per week.

**OPT 274 Contact Lens Theory II (3 cr.)**

Explores soft spherical and gas permeable contact lens fitting philosophies, tolerances, and designs. Develops the student's patient evaluation skills, patient training skills, and skills for evaluating the fit and verification of contact lenses. Prerequisite: OPT 273 or equivalent. Lecture 3 hours per week.

**OPT 280 Contact Lens Clinical (3 cr.)**

Promotes the development of clinical skills in fundamental contact lens tasks at the entry level under the direction and supervision of a preceptor. Emphasizes professional standards. Prerequisite: OPT 274 or equivalent. Laboratory 6 hours per week.

**OPT 105 Anatomy, Physiology, and Pathology of the Eye (3 cr)**

This course will include fundamentals of various body systems and principles of human physiology, methods of drug delivery including the advantages and disadvantages of drops, ointments, sustained release systems, systemic use of medications, basic characteristics of common external and internal diseases of the eye, and ocular emergencies.