

# OPHTHALMIC TECHNOLOGY MISSISSIPPI CURRICULUM FRAMEWORK

Opticianry/Dispensing Optician (Program CIP: 51.1801)

February 2019



**Published by:**

Mississippi Community College Board  
Division of Workforce, Career, and Technical Education  
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The Office of Curriculum and Instruction (OCI) was founded in 2013 under the Division of Workforce, Career, and Technical Education at the Mississippi Community College Board (MCCB). The office is funded through a partnership with The Mississippi Department of Education (MDE), who serves as Mississippi's fiscal agent for state and federal Career and Technical Education (CTE) Funds. The OCI is tasked with developing statewide CTE curriculum, programming, and professional development designed to meet the local and statewide economic demand.

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## RESEARCH ABSTRACT

The curriculum framework in this document reflects changes in the workplace and a number of other factors that impact local vocational–technical programs. Federal and state legislation calls for articulation between high school and community college programs, integration of academic and vocational skills, and the development of sequential courses of study that provide students with the optimum educational path for achieving successful employment. National skills standards developed by industry groups and sponsored by the U.S. Department of Education and Labor, provide vocational educators with the expectations of employers across the United States. All of these factors are reflected in the framework found in this document.

The last validated and approved revision of this curriculum took place in 2010. In the spring of 2019, the Office of Curriculum and Instruction (OCI) met with the different industry members who made up the advisory committees for the Ophthalmic Technology program. An industry questionnaire was used to gather feedback concerning the trends and needs, both current and future, of their field. Program faculty, administrators, and industry members were consulted regarding industry workforce needs and trends.

Industry advisory team members from the college involved with this program were asked to give input related to changes to be made to the curriculum framework. Specific comments related to occupation related skills needed in this program include communication skills, comprehension of technical skills, and knowledge of lens, perimeters, and prescriptions.

Included in this curriculum development is the sequence of courses required for this programs of study.

## REVISION HISTORY

2019- Office of Curriculum & Instruction, Mississippi Community College Board

# ADOPTION OF NATIONAL CERTIFICATION STANDARDS

**The Commission on Opticianry Accreditation (COA)**, a not-for-profit agency, accredits opticianry education in the United States. COA accredits two-year opticianry degree programs and one-year ophthalmic laboratory technology certificate programs in the United States and Canada that are sponsored by post-secondary institutions accredited by agencies recognized by the Department of Education or Council on Higher Education Accreditation (CHEA).

COA fosters excellence in education through the development of standards for assessing educational effectiveness, encourages improvement through continuous evaluation and planning, and assures the educational community, the general public, and other agencies or organizations that an institution has clearly defined and appropriate objectives, maintains conditions under which their achievement can be reasonably expected, appears in fact to be accomplishing and can be expected to continue to do so.

COA continually develops these educational standards by which opticianry programs are evaluated based on the skills and knowledge necessary for the progression, conducts program evaluation, and publishes a list of accredited programs that meet the national accreditation standards.

More information related to these standards can be found at the following website:

<http://www.coaccreditation.com/essentials-dispensing.pdf>

Industry standards are based on the Essentials of an Accredited Program for Opticianry Content Specifications for the Examination in opticianry.

Permission was granted by the Commission on Opticianry Accreditation to include the competencies and objectives in this curriculum. More information related to these standards can be found at the following website:

<http://coaccreditation.com/>

# INDUSTRY JOB PROJECTION DATA

## Ophthalmic Technology

Ophthalmic Technology is the field that prepares students for a career as an opticians. There is 7.90% increase in occupational demand at the national level. Median annual income for opticians is \$35,526.40 at the national level. A summary of occupational data from the National Strategic Planning and Analysis Research Center is displayed below:

**Table 1: Education Level**

Program Occupations	Education Level
Ophthalmic Medical Technicians	Long-Term on-the-job training

**Table 2: Occupational Overview**

	Region	State	United States
2016 Occupational Jobs	406	406	44,838
2026 Occupational Jobs	419	419	48,381
Total Change	13	13	3,543
Total % Change	3.20%	3.20%	7.90%
2016 Median Hourly Earnings	\$16.83	\$16.83	\$17.08
2016 Median Annual Earnings	\$35,006.40	\$35,006.40	\$35,526.40
Annual Openings	1	1	354

**Table 3: Occupational Breakdown**

Description	2016 Jobs	2026 Jobs	Annual Openings	2016 Hourly Earnings	2016 Annual Earnings 2,080 Work Hours
Ophthalmic Technology	406	419	1	\$16.83	\$35,006.40
Total	406	419	1	\$16.83	\$35,006.40

**Table 4: Occupational Change**

Description	Regional Change	Regional % Change	State % Change	National % Change
Ophthalmic Medical Technicians	13	3.20%	3.20%	7.90%

## ARTICULATION

No articulated credit will be offered upon implementation of this curriculum. Local agreements and dual credit partnerships are encouraged.

## TECHNICAL SKILLS ASSESSMENT

Colleges should report the following for students who complete the program with an Associate of Applied Science Degrees for technical skills attainment:

The Commission on Opticianry Accreditation Examination will be used to assess students upon completion of this program, after meeting the requirements for the AAS degree.

## ONLINE AND BLENDED LEARNING OPPORTUNITIES

Course content includes lecture and laboratory semester credit hours. Faculty members are encouraged to present lecture related content to students in an online or blended learning environment. Training related to online and blended learning will be available to faculty members through the MS Community College Board.



## PROGRAM DESCRIPTION

Ophthalmic Technology is a 2-year technical program. Upon successful completion of the program, the student is awarded the Associate of Applied Science Degree. The program is comprised of both vocational–technical and academic courses.

Opticianry is defined as “the art and science of optics to compounding, filing, and adapting of ophthalmic prescriptions, products and accessories.” Opticianry describes the preparation (making) of ophthalmic lenses, setting them into spectacle frames, and dispensing (fitting and delivering) them to the wearer. These acts include a large number of activities or trades, ranging from the mechanical act of lens grinding to the personal service of the selection, fitting, and adjusting of a pair of glasses to an individual’s face, selling, and public relations. The program also provides an introduction to ophthalmic assistance terminology and skills.

Academic, workplace, and industry standards are referenced at the end of each course where applicable. Although the program is not accredited by the Commission on Opticianry Accreditation, the industry standards are taken from the Essentials of an Accredited Educational Program for Opticianry.

# SUGGESTED COURSE SEQUENCE

## Accelerated Career Pathway

			SCH Breakdown			Clock Hour Breakdown		Certification Information
Course Number	Course Name	Semester Credit Hours	Lecture	Clinical/ Internship	Total Clock Hours	Lecture	Clinical/ Internship	Certification Name
OPT 1113	Ophthalmic Optics I	3	3	0	45			
OPT 1123	Ophthalmic Optics II	3	3	0	45			
OPT 1214	Optics Laboratory Techniques I	4	0	8	120			
	Electives	5						
	<b>TOTAL</b>	<b>15</b>	<b>6</b>	<b>8</b>	<b>210</b>			

## Career Certificate Required Courses

			SCH Breakdown			Clock Hour Breakdown		Certification Information
Course Number	Course Name	Semester Credit Hours	Lecture	Clinical/ Internship	Total Clock Hours	Lecture	Clinical/ Internship	Certification Name
OPT 1113	Ophthalmic Optics I	3	3	0	45			
OPT 1123	Ophthalmic Optics II	3	3	0	45			
OPT 1214	Optics Laboratory Techniques I	4	0	8	120			
OPT 1224	Optics Laboratory Techniques II	4	0	8	120			
OPT 1313	Laboratory Management and Inventory Control I	3	3	0	45			
OPT 1333	Introduction to Ophthalmic Assistance	3	3	0	45			
OPT 1413	Ophthalmic Dispensing I	3	3	0	45			
OPT 2513	Optical Theory and Instrumentation	3	3	0	45			
	Electives	4						
	<b>TOTAL</b>	<b>30</b>	<b>12</b>	<b>16</b>	<b>510</b>			

**Technical Certificate Required Courses**

			SCH Breakdown			Clock Hour Breakdown		Certification Information
Course Number	Course Name	Semester Credit Hours	Lecture	Clinical/ Internship	Total Clock Hours	Lecture	Clinical/ Internship	Certification Name
OPT 2423	Ophthalmic Dispensing II	3	3	0	45			
OPT 2433	Ophthalmic Dispensing III	3	3	0	45			
OPT 2613	Dispensing Clinic I	3	0	6	90			
OPT 2623	Dispensing Clinic II	3	0	6	90			
OPT 291(3-4)	Externship	3-4	0	9-10	135-136			
<b>TOTAL</b>		<b>15-16</b>	<b>6</b>	<b>21-22</b>	<b>405-406</b>			

## General Education Core Courses

To receive the Associate of Applied Science degree, a student must complete all of the required coursework found in the Career Certificate option, Technical certificate option, and a minimum of 15 semester hours of General Education core. The courses in the General Education Core may be spaced out over the entire length of the program so that students complete some academic and Career Technical courses each semester or provided primarily within the last semester. Each community college will specify the actual courses that are required to meet the General Education Core Requirements for the Associate of Applied Science degree at their college. The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) Section 9 Standard 3 of the *Principles of Accreditation: Foundations for Quality Enhancement*<sup>1</sup> describes the general education core.

Section 9 Standard 3:

3. The institution requires the successful completion of a general education component at the undergraduate level that
  - a) is based on a coherent rationale.
  - b) is a substantial component of each undergraduate degree program. For degree completion in associate programs, the component constitutes a minimum of 15 semester hours of the equivalent; for baccalaureate programs, a minimum of 30 semester hours or the equivalent.
  - c) ensures breadth of knowledge. These credit hours include at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural science/mathematics. These courses do not narrowly focus on those skills, techniques, and procedures specific to a particular occupation or profession.

### General Education Courses

			SCH Breakdown			Contact Hour Breakdown		Certification Information
Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Total Contact Hours	Lecture	Lab	Certification Name
	Humanities/Fine Arts	3						
	Social/Behavioral Sciences	3						
	Math/Science	3						
	Academic electives	6						
	<b>TOTAL</b>	<b>15</b>						

<sup>1</sup> Southern Association of Colleges and Schools Commission on Colleges. (2017). *The Principles of Accreditation: Foundations for Quality Enhancement*. Retrieved from <http://www.sacscoc.org/2017ProposedPrinc/Proposed%20Principles%20Adopted%20by%20BOT.pdf>

**Course Listing**

			SCH Breakdown				Clock Hour Breakdown			Certification Information
Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Clinical/ Internship	Total Clock Hours	Lecture	Lab	Clinical/ Internship	Certification Name
OPT 1113	Ophthalmic Optics I	3	3	0		45				
OPT 1123	Ophthalmic Optics II	3	3	0		45				
OPT 1214	Optics Laboratory Techniques I	4	0	8		120				
OPT 1224	Optics Laboratory Techniques II	4	0	8		120				
OPT 1313	Laboratory Management and Inventory Control I	3	3	0		45				
OPT 1333	Introduction to Ophthalmic Assistance	3	3	0		45				
OPT 1413	Ophthalmic Dispensing I	3	3	0		45				
OPT 2423	Ophthalmic Dispensing II	3	3	0		45				
OPT 2433	Ophthalmic Dispensing III	3	3	0		45				
OPT 2513	Optical Theory and Instrumentation	3	3	0		45				
OPT 2613	Dispensing Clinic I	3	0	6		90				
OPT 2623	Dispensing Clinic II	3	0	6		90				
OPT 291(3-4)	Externship	3-4	0		9-10	135-136				
	<b>Other Instructor Approved Elective(s)</b>									

# COURSE DESCRIPTIONS

**Course Number and Name:**        **OPT 1113**        **Ophthalmic Optics I**

**Description:**                                This course is a study of basic principles of light. Topics covered include anatomy and physiology of the eye, visual conditions of the human eye, and appropriate lens to correct these conditions.

<b>Hour Breakdown:</b>	Semester Hours	Lecture	Lab	Contact Hours
	3	3	0	45

**Prerequisite:**                                Instructor Approved

## **Student Learning Outcomes:**

1. Discuss principles of light <sup>OPT 2</sup>
  - a. Explain wave theory
  - b. Explain light refraction
2. Interpret the ophthalmic prescription <sup>OPT 2</sup>
  - a. Define the procedure for filling an ophthalmic prescription
  - b. Determine the total lens power as taken from the optical cross
  - c. Determine the appropriate base curve for a given prescription
3. Discuss the lens clock <sup>OPT 2, OPT 7, OPT 10</sup>
  - a. Name the parts of a lens clock
  - b. Describe the use of a lens clock
4. Differentiate the types of multifocal lenses <sup>OPT 2</sup>
  - a. Identify, by sight, types of multifocal lenses
  - b. Describe the characteristics of types of multifocal lenses
5. Discuss factors affecting lenses <sup>OPT 2, OPT 5</sup>
  - a. Identify the different factors that affect the outcome of lenses
  - b. Discuss ideal lens options based on conditions of the human eye

## **Standards Based on Essentials of an Accredited Program for Opticianry**

OPT 2    Analyze and interpret prescriptions  
OPT 5    Assist the patient/customer in selection of proper frames and lenses  
OPT 7    Neutralize lenses, and verify eyewear/vision aids prescriptions  
OPT 10   Demonstrate proficiency in the operation and function of equipment

**Course Number and Name:**        **OPT 1123**        **Ophthalmic Optics II**

**Description:**                                This course is a continuation of Ophthalmic Optics I. Topics include the theory of optical instruments, positive and negative cylinders, prisms, vertex distance, and frame selection.

**Hour Breakdown:**

Semester Hours	Lecture	Lab	Contact Hours
3	3	0	45

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. Explain positive and negative cylinders <sup>OPT 2</sup>
  - a. Define positive and negative cylinders
  - b. Discuss how positive and negative cylinders affect an ophthalmic lens
2. Explain optical effects related to decentration <sup>OPT 2, OPT 8</sup>
  - a. Explain the purpose of decentering the lens
  - b. Discuss the procedure used to determine where the optical center of a lens is placed
  - c. Define the effect a prism has on a ray of light
  - d. Determine the location of the major reference point
  - e. Determine how to locate the pupillary distance for near and far vision
3. Determine the effects of the lens as it is positioned before the eye <sup>OPT 2, OPT 8</sup>
  - a. Calculate the effective power of the lens due to shift in vertex distance
  - b. Determine the amount of compensation due to the shift in vertex distance
4. Explain procedures to determine pupillary distance <sup>OPT 3, OPT 10</sup>
  - a. Discuss methods for determining pupillary distance
  - b. Explain methods used with the special needs population
5. Explain the effects of prisms on an ophthalmic lens <sup>OPT 2</sup>
  - a. Define the relationship between prism and decentration
  - b. Define wanted prism
  - c. Define unwanted prism
  - d. Calculate prism amount, and determine direction
6. Discuss basic knowledge of frame selection <sup>OPT 3, OPT 6</sup>
  - a. Determine the appropriate frame for a prescription
  - b. Explain fitting characteristics of different frames
  - c. Discuss wearing habits of different individuals

**Standards Based on Essentials of an Accredited Program for Opticianry**

- OPT 2    Analyze and interpret prescriptions
- OPT 3    Communicate effectively with patient/customer
- OPT 6    Determine patient/customer physiognomic (facial and eye) measurements
- OPT 8    Adapt and fit corrective eyewear/vision aids
- OPT 10   Demonstrate proficiency in the operation and function of equipment

**Course Number and Name:**        **OPT 1214**        **Optics Laboratory Techniques I**

**Description:**                                This course will introduce the student to all basic equipment necessary to process the lens through the surface operation. Emphasis will be placed on basic safety and on how to prepare, operate, and maintain equipment.

**Hour Breakdown:**

Semester Hours	Lecture	Lab	Contact Hours
4	0	8	120

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. Calculate surface layout for glass and plastic lenses <sup>OPT 1, OPT 10</sup>
  - a. Calculate shop slip
  - b. Mark the lens
2. Block the lens <sup>OPT 9, OPT 10</sup>
  - a. Demonstrate precoating of lenses
  - b. Select lens blocks
  - c. Block lens using alloy blocker
3. Generate the lens <sup>OPT 9, OPT 10, OPT 12</sup>
  - a. Set curves on generator
  - b. Set thickness dial
  - c. Correct insert lens in lens chuck of generator
  - d. Remove lens from generator, and inspect curve and thickness
4. Fine-grind the lens (plastic), using two step procedure, to include the following:  
First fine <sup>OPT 9, OPT 10, OPT 12</sup>
  - a. Select lap, and inspect for accuracy
  - b. Place first fining pad on lap
  - c. Place lap on lap table of fining machine making sure lap is seated
  - d. Place lens on machine with axis pins corresponding with axis of lens block
  - e. Apply pressure
  - f. Set timer to start machine
  - g. Upon completion of cycle, remove, clean, and inspect lens  
Second fine <sup>OPT 9, OPT 10, OPT 12</sup>
  - h. Place second fine pad on lap over first fine pad, and repeat step 4c through 4g above
  - i. Remove lap from machine; clean lap for polishing procedure
5. Polish the lens <sup>OPT 9, OPT 10, OPT 12</sup>
  - a. Place polishing pad on lap used for fining
  - b. Place lap on lap table of machine and tighten
  - c. Place lens on machine making sure axis pins are in place
  - d. Set timer to start machine
  - e. Upon completion of cycle, remove, clean, and inspect
  - f. Remove lap from machine, clean lap, and replace to proper place
6. Deblock the lens to include the following: <sup>OPT 9, OPT 10</sup>
  - a. Place lens in deblocker to separate lens from block
  - b. Remove lens from deblocker
  - c. Clean and inspect lens
  - d. Remove block from blocker, clean a block, and replace it in proper storage



7. Demonstrate lensometry <sup>OPT 7, OPT 9, OPT 10</sup>
  - a. Demonstrate the procedure used to determine single vision lenses
  - b. Demonstrate the procedure used to determine the power of a bifocal lens
  - c. Demonstrate the procedure used to determine the power of a trifocal lens
8. Demonstrate equipment maintenance <sup>OPT 9, OPT 10, OPT 12</sup>
  - a. Demonstrate lubrication of machinery
  - b. Demonstrate the procedure for checking coolants
  - c. Demonstrate the procedure for changing coolants
9. Perform basic safety procedures <sup>OPT 9</sup>
  - a. Assist with basic emergency procedures to include falls, seizures, and fainting
  - b. Demonstrate procedures for first aid for sudden illness and accident
  - c. Perform one-man adult CPR

**Standards Based on Essentials of an Accredited Program for Opticianry**

- OPT 1 Discuss prescription eyewear/vision aids and other patient/customer related information, verbal and written, with the prescriber
- OPT 7 Neutralize lenses, and verify eyewear/vision aids prescriptions
- OPT 9 Apply rules and regulations for equipment safety
- OPT 10 Demonstrate proficiency in the operation and function of equipment
- OPT 12 Assist in the business related areas, including record maintenance, frame and lens inventory, supply and equipment maintenance, and third party forms

**Course Number and Name:**        **OPT 1224**        **Optics Laboratory Techniques II**

**Description:**                                This course is a continuation of Optics Laboratory Techniques I. Emphasis will be placed on lens inspection, cutting and edging, heat treatment, lens insertion, inspection, and tinting.

**Hour Breakdown:**

Semester Hours	Lecture	Lab	Contact Hours
4	0	8	120

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. Inspect the finished lens OPT 1, OPT 7, OPT 11
  - a. Check lens for imperfections
  - b. Check lens for power
  - c. Spot lens using lens marker on lensometer
2. Lay out lens for edging OPT 1, OPT 7, OPT 11
  - a. Check frame size
  - b. Calculate decentration
  - c. Calculate segment drop
  - d. Set layout marker to correct decentration
  - e. Set layout marker to correct seg. drop
  - f. Place lens in layout marker making sure lens is lined up correctly
  - g. Mark and remove lens
3. Block the lens for edging OPT 9, OPT 10
  - a. Select edging block
  - b. Place edge blocking pad on block
  - c. Place block in blocker
  - d. Align lens making sure axis line of lens is aligned with axis line of blocker
  - e. Block lens
4. Edge the lens OPT 9, OPT 10, OPT 12
  - a. Select frame pattern
  - b. Place pattern on edger
  - c. Calculate edger setting
  - d. Set edger to edger calculation
  - e. Set bevel location
  - f. Place lens in edger
  - g. Edge lens for given frame size
  - h. Remove flakes from bevel of lens using hand edger
5. Heat treat the glass lenses OPT 9, OPT 10, OPT 12
  - a. Preheat heat treating unit
  - b. Calculate time required for heat treatment
  - c. Prepare lens for treatment
  - d. Place in unit elevator
  - e. Set timer, and begin the cycle
  - f. Remove lens from machine
  - g. Check lens for maltese cross using polariscope
  - h. Drop ball test lens for strength

6. Insert lens in plastic frame <sup>OPT 9, OPT 10</sup>
  - a. Heat frame using warmer
  - b. Insert lens
  - c. Straighten and align frame
7. Insert lens in metal frame <sup>OPT 9, OPT 10</sup>
  - a. Remove eyewire screws
  - b. Place lens in bevel of frame
  - c. Replace screws
  - d. Straighten and align frame and lenses
8. Complete final inspection <sup>OPT 2, OPT 7, OPT 11</sup>
  - a. Verify frame alignment
  - b. Verify pupillary distance
  - c. Verify segment height
  - d. Verify lens axis
  - e. Verify lens power
  - f. Verify overall appearance of glasses
9. Tint plastic lens <sup>OPT 9, OPT 12</sup>
  - a. Preheat dye unit
  - b. Clean lens
  - c. Dip in lens preparation
  - d. Place lens in proper dye depending on color and tint desired
  - e. Remove lens from dye and wash

**Standards Based on Essentials of an Accredited Program for Opticianry**

- OPT 1 Discuss prescription eyewear/vision aids and other patient/customer related information, verbal and written, with the prescriber
- OPT 2 Analyze and interpret prescriptions
- OPT 7 Neutralize lenses, and verify eyewear/vision aids prescriptions
- OPT 9 Apply rules and regulations for equipment safety
- OPT 10 Demonstrate proficiency in the operation and function of equipment
- OPT 11 Maintain patient/customer records
- OPT 12 Assist in the business related areas, including record maintenance, frame and lens inventory, supply and equipment maintenance, and third party forms

**Course Number and Name:**        **OPT 1313        Laboratory Management and Inventory Control I**

**Description:**                                This course will serve as an introduction to supplies and materials used in the ophthalmic laboratories and an introduction to mathematical optical calculations. Laboratory safety procedures will be discussed. Laboratory inventory and management skills will be demonstrated using computer software.

**Hour Breakdown:**

Semester Hours	Lecture	Lab	Contact Hours
3	3	0	45

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. Discuss laboratory management <sup>OPT 2, OPT 11, OPT 12</sup>
  - a. Identify supplies and materials used in the ophthalmic laboratory
  - b. Describe inventory procedures for frames and lenses
2. Discuss laboratory safety as related to ophthalmic technology <sup>OPT 2, OPT 9, OPT 12</sup>
  - a. List the hazard areas of the laboratory
  - b. Develop safety procedures to meet a described laboratory layout
3. Describe and use inventory and laboratory management software <sup>OPT 11, OPT 12</sup>
  - a. Describe computerized management control for laboratory and inventory
  - b. Demonstrate practical use of management control software
4. Perform mathematical calculation related to optics <sup>OPT 2</sup>
  - a. Perform basic business calculation
  - b. Perform optical calculations

**Standards Based on Essentials of an Accredited Program for Opticianry**

- OPT 2    Analyze and interpret prescriptions
- OPT 9    Apply rules and regulations for equipment safety
- OPT 11   Maintain patient/customer records
- OPT 12   Assist in the business related areas, including record maintenance, frame and lens inventory, supply and equipment maintenance, and third party forms

**Course Number and Name:**        **OPT 1333**        **Introduction to Ophthalmic Assistance**

**Description:**                                This course is an introduction to ophthalmic terminology and skills. Emphasis on this course will also include basic anatomy and function of the human eye.

**Hour Breakdown:**

Semester Hours	Lecture	Lab	Contact Hours
3	3	0	45

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. Discuss the structure and function of the eye<sup>OPT4</sup>
  - a. Identify the structures of the eye
  - b. Explain the functions of each structure of the eye
2. Explain conditions of the human eye<sup>OPT 2, OPT 4</sup>
  - a. Define and cite conditions of the human eye
  - b. Identify the type of lens that corrects condition of the eye
  - c. Identify common diseases of the eye
3. Perform basic ophthalmic patient pre-testing
  - a. Obtain visual acuity
  - b. Perform color vision and depth perception testing
  - c. Obtain medical, ocular, family, and social history
4. Identify common ocular pharmaceutical drugs
  - a. Identify common diagnostic drugs
  - b. Identify common treatment drugs

**Standards Based on Essentials of an Accredited Program for Opticianry**

OPT 2 Analyze and interpret prescriptions

OPT 4 Identify the human eye structure, function, and pathology

**Course Number and Name:**        **OPT 1413**        **Ophthalmic Dispensing I**

**Description:**                                This course is a foundation course that will serve as a lecture introduction to ophthalmic dispensing and related areas. Topics include frame parts, selection, lens positioning and insertion, frame fitting, and progressive lenses.

**Hour Breakdown:**

Semester Hours	Lecture	Lab	Contact Hours
3	3	0	45

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. Discuss the basic frame parts used in eyewear <sup>OPT 1</sup>
  - a. Label the basic frame parts used in eyewear
  - b. Explain the basic frame parts used in eyewear
2. Develop skills in frame selection <sup>OPT 1, OPT 6, OPT 8</sup>
  - a. Explain the frame dimensional properties
  - b. Describe the accurate methodology for measuring the interpupillary distance, and explain its relationship with the eyeglass lens
  - c. Describe frame selection based on facial anatomy
3. Explain lens positioning in the frame <sup>OPT 2</sup>
  - a. Explain the optical center placement
  - b. Explain the multifocal height
  - c. Determine the minimum lens blank size
4. Explain the techniques of inserting the lens in the frame to achieve a neat professional appearance <sup>OPT 8</sup>
  - a. Describe methods of lens insertion
  - b. Explain standard alignment and frame fitting
5. Summarize the art of fitting the frame to a client <sup>OPT 1, OPT 8</sup>
  - a. Explain fitting of plastic frames
  - b. Explain fitting of metal frames
  - c. Explain fitting of rimless mounting
  - d. Explain fitting of half-eye frames
  - e. Explain nylon supra frames
6. Explain the lens design and proper fitting techniques of a progressive lens <sup>OPT 1, OPT 8</sup>
  - a. Discuss lens design of a progressive lens
  - b. Describe fitting techniques of a progressive lens

**Standards Based on Essentials of an Accredited Program for Opticianry**

- OPT 1    Discuss prescription eyewear/vision aids and other patient/customer related information, verbal and written, with the prescriber
- OPT 2    Analyze and interpret prescriptions
- OPT 8    Adapt and fit corrective eyewear/vision aids

**Course Number and Name:**        **OPT 2423**        **Ophthalmic Dispensing II**

**Description:**                                This course is an introduction to prescription analysis and interpretation. Various types of Rx's will be discussed as to what types of lens and frames should be considered for the final product. Emphasis will be placed on the effect of the Rx as related to the patient's needs and wants. Tints, the thickness factor, cosmetic considerations, and the overall utility of the final product will be discussed. Business communication skills will also be introduced.

**Hour Breakdown:**

Semester Hours	Lecture	Lab	Contact Hours
3	3	0	45

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. List lens and frame types that satisfy the prescription requirements <sup>OPT 2, OPT 8</sup>
  - a. Identify frame types used with positive lenses
  - b. Identify frame types used with negative lenses
2. Discuss lens tints as related to the client's needs and Rx requirements <sup>OPT 1, OPT 2, OPT 3, OPT 8</sup>
  - a. Interpret the transmission chart of a particular lens tint
  - b. Describe the effects of tints as related to the patient's needs and Rx requirements
3. Determine information relative to the final Rx <sup>OPT 7, OPT 8</sup>
  - a. Calculate decentration
  - b. Calculate blank size
  - c. Determine base curve selection
4. Explain business communication skills <sup>OPT 1, OPT 3, OPT 12</sup>
  - a. List aspects of communication including communication between the dispenser and a client
  - b. Discuss the importance of visual communication
  - c. Discuss the importance of verbal communication
  - d. Discuss the importance of proper telephone etiquette

**Standards Based on Essentials of an Accredited Program for Opticianry**

- OPT 1    Discuss prescription eyewear/vision aids and other patient/customer related information, verbal and written, with the prescriber
- OPT 2    Analyze and interpret prescriptions
- OPT 3    Communicate effectively with patient/customer
- OPT 7    Neutralize lenses, and verify eyewear/vision aids prescriptions
- OPT 8    Adapt and fit corrective eyewear/vision aids
- OPT 12   Assist in the business related areas, including record maintenance, frame and lens inventory, supply and equipment maintenance, and third party forms

**Course Number and Name:**        **OPT 2433**        **Ophthalmic Dispensing III**

**Description:**                                This course is a continuation of Ophthalmic Dispensing II. Emphasis will be placed on the more advanced and unusual prescription related to ophthalmic dispensing and on sales techniques. Topics to improve the ophthalmic dispenser's relationship with fellow opticians, optometrists, ophthalmologists, wholesalers, manufacturers, and employees will be discussed.

**Hour Breakdown:**

Semester Hours	Lecture	Lab	Contact Hours
3	3	0	45

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. Compare the optical difference between special and regular lenses <sup>OPT 1, OPT 2, OPT 8, OPT 11</sup>
  - a. Describe the different types of invisible lenses and cataract lenses
  - b. List the fitting procedure for cataract lenses and invisible lenses
  - c. Describe the need for occupational safety eyewear
2. Discuss the special needs client <sup>OPT 1, OPT 8, OPT 11</sup>
  - a. Describe the various types of eyewear used for the special needs clients
  - b. Explain how eyewear is fitted for special needs clients
3. Discuss selling techniques <sup>OPT 1, OPT 5</sup>
  - a. Examine business ethics
  - b. Discuss high and low pressure selling techniques
4. Discuss the relationship between the wholesale supplier and the retailer <sup>OPT 12</sup>
  - a. Relate problems of a salesperson
  - b. Analyze the attitude of the buyer
  - c. Discuss supply lab problems on the wholesale level
5. Discuss employability skills <sup>OPT 12</sup>
  - a. Explain responsibilities of the employee
  - b. Discuss employee appearance
  - c. Complete an application
  - d. Write a resume
  - e. Write a letter of resignation

**Standards Based on Essentials of an Accredited Program for Opticianry**

- OPT 1    Discuss prescription eyewear/vision aids and other patient/customer related information, verbal and written, with the prescriber
- OPT 2    Analyze and interpret prescriptions
- OPT 5    Assist the patient/customer in selection of proper frames and lenses
- OPT 8    Adapt and fit corrective eyewear/vision aids
- OPT 11    Maintain patient/customer records
- OPT 12    Assist in the business related areas, including record maintenance, frame and lens inventory, supply and equipment maintenance, and third party forms



**Course Number and Name:**        **OPT 2513**        **Optical Theory and Instrumentation**

**Description:**                                This course is an in-depth look into the basic theoretical principles of optical theory, as related to lenses, fitting problems, and instrumentation. Such topics as reflection, refraction, magnification, and object-location will be discussed.

**Hour Breakdown:**

Semester Hours	Lecture	Lab	Contact Hours
3	3	0	45

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. Describe the action of a light ray as it passes through an optical surface <sup>OPT 2</sup>
  - a. Describe the action of a single ray of light and how it is affected when passing through a transparent optical surface
  - b. Describe the action of a curved surface on more than one ray of light
2. Discuss lens design <sup>OPT 2</sup>
  - a. Explain how lenses can be made in a variety of forms, with many forms possible for a lens of the same power
  - b. Explain the factors that affect lens functions from its original design through its final position in the frame
3. Discuss prisms <sup>OPT 2, OPT 7</sup>
  - a. Define Prentice's rule
  - b. Calculate prism for a given Rx
4. Describe the effect of near addition <sup>OPT 2, OPT 7</sup>
  - a. Explain the concept of near addition
  - b. Calculate the near power of a lens
5. Examine vertical prismatic imbalance <sup>OPT 2</sup>
  - a. Discuss bicentric grinding
  - b. Calculate vertical prismatic imbalance
  - c. Explain the procedure for bicentric grinding

**Standards Based on Essentials of an Accredited Program for Opticianry**

OPT 2    Analyze and interpret prescriptions

OPT 7    Neutralize lenses, and verify eyewear/vision aids prescriptions

**Course Number and Name:**        **OPT 2613**        **Dispensing Clinic I**

**Description:**                                This course is an on-campus clinical experience operated by the Ophthalmic Dispensing students. Practical clinical procedures will be practiced and proficiency demonstrated.

**Hour Breakdown:**

Semester Hours	Lecture	Lab	Clock Hours
3	0	6	90

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. Demonstrate small business procedures OPT 1, OPT 2, OPT 3, OPT 11, OPT 12
  - a. Set up a procedure for office operations
  - b. Write up Rx orders according to Rx requirements and patients' needs
  - c. Demonstrate inventory control in the clinic
  - d. Prepare order forms
2. Demonstrate ophthalmic procedures OPT 1, OPT 2, OPT 3, OPT 5, OPT 11, OPT 12
  - a. Demonstrate frame adjustments to obtain recommended fit
  - b. Complete selected clinic assignments
  - c. Demonstrate communication skills

**Standards Based on Essentials of an Accredited Program for Opticianry**

- OPT 1    Discuss prescription eyewear/vision aids and other patient/customer related information, verbal and written, with the prescriber
- OPT 2    Analyze and interpret prescriptions
- OPT 3    Communicate effectively with patient/customer
- OPT 5    Assist the patient/customer in selection of proper frames and lenses
- OPT 11   Maintain patient/customer records
- OPT 12   Assist in the business related areas, including record maintenance, frame and lens inventory, supply and equipment maintenance, and third party forms

**Course Number and Name:**        **OPT 2623**        **Dispensing Clinic II**

**Description:**                                This course is a continuation of Dispensing Clinic I. Continuous evaluations will be done to study the clinic operation in terms of its efficiency and effectiveness of operations. Additional adjustments and delivery will be done. Emphasis will be placed on developed cases of special Rx's and pediatric dispensing. Advanced projects, such as multifocal lens fitting, will be completed.

**Hour Breakdown:**

Semester Hours	Lecture	Lab	Contact Hours
3	0	6	90

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. Determine the best eyewear for the client based on occupation, sports, hobbies, and so forth <sup>OPT 1, OPT 2, OPT 3, OPT 5, OPT 6, OPT 8, OPT 11, OPT 12</sup>
  - a. Identify all FDA rules pertaining to eyeglasses
  - b. Select the appropriate lens for the client
  - c. Select the appropriate frame for the client
  - d. Develop case histories of special and pediatric prescriptions
2. Explain multifocal lens fitting techniques <sup>OPT 1, OPT 2, OPT 6, OPT 11</sup>
  - a. Identify different types of multifocal lens fitting techniques
  - b. Demonstrate fitting of multifocal lenses
  - c. Determine the pupillary distance and segment location
  - d. Identify different types of progressive lenses
  - e. Demonstrate fitting progressive lenses
3. Determine coating needed for lenses <sup>OPT 1, OPT 2, OPT 3, OPT 5, OPT 6, OPT 8, OPT 11, OPT 12</sup>
  - a. Apply Ultra Violet (UV) 400 coating
  - b. Apply scratch resistant coating
  - c. Apply tints
  - d. Discuss antireflective coating

**Standards Based on Essentials of an Accredited Program for Opticianry**

- OPT 1    Discuss prescription eyewear/vision aids and other patient/customer related information, verbal and written, with the prescriber
- OPT 2    Analyze and interpret prescriptions
- OPT 3    Communicate effectively with patient/customer
- OPT 5    Assist the patient/customer in selection of proper frames and lenses
- OPT 6    Determine patient/customer physiognomic (facial and eye) measurements
- OPT 8    Adapt and fit corrective eyewear/vision aids
- OPT 11    Maintain patient/customer records
- OPT 12    Assist in the business related areas, including record maintenance, frame and lens inventory, supply and equipment maintenance, and third party forms

**Course Number and Name:**        **OPT 291(3-4)    Externship**

**Description:**                                This course will be conducted off-campus at a clinical location. The student will be under the direct supervision of the manager or clinical director. Evaluations will be completed by the instructor and off-campus clinical participants.

**Hour Breakdown:**

Semester Hours	Lecture	Clinical	Contact Hours
3-4	0	9-10	135-136

**Prerequisite:**                                Instructor Approved

**Student Learning Outcomes:**

1. Demonstrate mastery of selected skills in a clinical setting OPT 1, OPT 2, OPT 3, OPT 4, OPT 5, OPT 6, OPT 7, OPT 8, OPT 9, OPT 10, OPT 11, OPT 12, OPT 13, OPT 14
  - a. Perform basic mathematical and algebraic operations
  - b. Demonstrate knowledge of the human eye structure, function, and pathology
  - c. Neutralize eyewear prescriptions
  - d. Assist the client in selection of proper frames and lenses
  - e. Price and collect fees from clients for ophthalmic goods and services
  - f. Prepare ophthalmic laboratory job orders
  - g. Deliver prescription eyewear, and instruct client in use and care
  - h. Maintain patient records
  - i. Apply rules and regulations for safe work practices
  - j. Recognize the function of equipment
  - k. Utilize and maintain equipment
  - l. Demonstrate proficiency in finishing techniques
  - m. Assist in the business-related area of ophthalmic dispensing including record maintenance, frame and lens inventory, supply and equipment maintenance, and third party forms
  - n. Complete one written report over specific job duties performed during internship
2. Demonstrate communication skills OPT 1, OPT 2, OPT 3, OPT 4, OPT 5, OPT 6, OPT 7, OPT 8, OPT 9, OPT 10, OPT 11, OPT 12, OPT 13, OPT 14
  - a. Use effective oral and written communication
  - b. Assess vocational and avocational needs of the client
  - c. Provide follow-up service to the client, including periodic eyewear adjustment, repair, and lens and frame replacement
  - d. Respond to client complaints
  - e. Discuss prescription eyewear and other client-related information (verbal and written) with the refractionist

**Standards Based on Essentials of an Accredited Program for Opticianry**

- OPT 1    Discuss prescription eyewear/vision aids and other patient/customer related information, verbal and written, with the prescriber
- OPT 2    Analyze and interpret prescriptions
- OPT 3    Communicate effectively with patient/customer
- OPT 4    Identify the human eye structure, function, and pathology
- OPT 5    Assist the patient/customer in selection of proper frames and lenses
- OPT 6    Determine patient/customer physiognomic (facial and eye) measurements
- OPT 7    Neutralize lenses, and verify eyewear/vision aids prescriptions
- OPT 8    Adapt and fit corrective eyewear/vision aids
- OPT 9    Apply rules and regulations for equipment safety

- OPT 10 Demonstrate proficiency in the operation and function of equipment
- OPT 11 Maintain patient/customer records
- OPT 12 Assist in the business related areas, including record maintenance, frame and lens inventory, supply and equipment maintenance, and third party forms
- OPT 13 Dispense and fit contact lenses, where allowed by regulation
- OPT 14 Dispense and fit artificial eyes and low vision aids, if appropriate

**Course Number and Name:** WBL 191(1-3) Work Based Learning

**Description:** A structured work-site learning experience in which the student, program area teacher, work-based learning coordinator, and work-site supervisor/mentor develop and implement an educational training agreement. This site is designed to integrate the student's academic and technical skills into a work environment, and may include regular meetings and seminars with school personnel for supplemental instruction and progress reviews. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours.

**Hour Breakdown:**

Semester Credit Hours	Lecture	Externship	Contact Hours
1		3	45
2		6	90
3		9	135

**Prerequisite:** Instructor Approved Technical Elective

**Student Learning Outcomes:**

1. Apply technical skills and related academic knowledge needed to be a viable member of the workforce.
  - a. Demonstrate technical skills necessary to complete job requirements.
  - b. Demonstrate academic skills necessary to complete job requirements.
  - c. Perform tasks detailed in an educational training agreement at the work setting.
  - d. Demonstrate knowledge of employability skills such as creating cover letters, resumes, etc.
2. Apply general workplace skills to include positive work habits necessary for successful employment.
  - a. Demonstrate appropriate human relationship skills in the work setting to include conflict resolution, team participation, leadership, negotiation, and customer/client service.
  - b. Utilize time, materials, and resource management skills.
  - c. Use critical thinking skills such as problem solving, decision making, and reasoning.
  - d. Acquire, evaluate, organize, maintain, interpret, and communicate information.

**Course Number and Name:**                      **WBL 192(1-3)    Work Based Learning**

**Description:**                                      A structured work-site learning experience in which the student, program area teacher, work-based learning coordinator, and work-site supervisor/mentor develop and implement an educational training agreement. This site is designed to integrate the student's academic and technical skills into a work environment, and may include regular meetings and seminars with school personnel for supplemental instruction and progress reviews.    Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours.

**Hour Breakdown:**

Semester Credit Hours	Lecture	Externship	Contact Hours
1		3	45
2		6	90
3		9	135

**Prerequisite:**                                      Instructor Approved Technical Elective

**Student Learning Outcomes:**

1.    Apply technical skills and related academic knowledge needed to be a viable member of the workforce.
  - a.    Demonstrate technical skills necessary to complete job requirements.
  - b.    Demonstrate academic skills necessary to complete job requirements.
  - c.    Perform tasks detailed in an educational training agreement at the work setting.
  - d.    Demonstrate knowledge of employability skills such as creating cover letters, resumes, etc.
2.    Apply general workplace skills to include positive work habits necessary for successful employment.
  - a.    Demonstrate appropriate human relationship skills in the work setting to include conflict resolution, team participation, leadership, negotiation, and customer/client service.
  - b.    Utilize time, materials, and resource management skills.
  - c.    Use critical thinking skills such as problem solving, decision making, and reasoning.
  - d.    Acquire, evaluate, organize, maintain, interpret, and communicate information.

**Course Number and Name:**                      **WBL 193(1-3)    Work Based Learning**

**Description:**                                      A structured work-site learning experience in which the student, program area teacher, work-based learning coordinator, and work-site supervisor/mentor develop and implement an educational training agreement. This site is designed to integrate the student's academic and technical skills into a work environment, and may include regular meetings and seminars with school personnel for supplemental instruction and progress reviews. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours.

**Hour Breakdown:**

Semester Credit Hours	Lecture	Externship	Contact Hours
1		3	45
2		6	90
3		9	135

**Prerequisite:**                                      Instructor Approved Technical Elective

**Student Learning Outcomes:**

1. Apply technical skills and related academic knowledge needed to be a viable member of the workforce.
  - a. Demonstrate technical skills necessary to complete job requirements.
  - b. Demonstrate academic skills necessary to complete job requirements.
  - c. Perform tasks detailed in an educational training agreement at the work setting.
  - d. Demonstrate knowledge of employability skills such as creating cover letters, resumes, etc.
2. Apply general workplace skills to include positive work habits necessary for successful employment.
  - a. Demonstrate appropriate human relationship skills in the work setting to include conflict resolution, team participation, leadership, negotiation, and customer/client service.
  - b. Utilize time, materials, and resource management skills.
  - c. Use critical thinking skills such as problem solving, decision making, and reasoning.
  - d. Acquire, evaluate, organize, maintain, interpret, and communicate information.



**Course Number and Name:**                    **WBL 291(1-3)    Work Based Learning**

**Description:**                                    A structured work-site learning experience in which the student, program area teacher, work-based learning coordinator, and work-site supervisor/mentor develop and implement an educational training agreement. This site is designed to integrate the student's academic and technical skills into a work environment, and may include regular meetings and seminars with school personnel for supplemental instruction and progress reviews. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours.

**Hour Breakdown:**

Semester Credit Hours	Lecture	Externship	Contact Hours
1		3	45
2		6	90
3		9	135

**Prerequisite:**                                    Instructor Approved Technical Elective

**Student Learning Outcomes:**

1. Apply technical skills and related academic knowledge needed to be a viable member of the workforce.
  - a. Demonstrate technical skills necessary to complete job requirements.
  - b. Demonstrate academic skills necessary to complete job requirements.
  - c. Perform tasks detailed in an educational training agreement at the work setting.
  - d. Demonstrate knowledge of employability skills such as creating cover letters, resumes, etc.
2. Apply general workplace skills to include positive work habits necessary for successful employment.
  - a. Demonstrate appropriate human relationship skills in the work setting to include conflict resolution, team participation, leadership, negotiation, and customer/client service.
  - b. Utilize time, materials, and resource management skills.
  - c. Use critical thinking skills such as problem solving, decision making, and reasoning.
  - d. Acquire, evaluate, organize, maintain, interpret, and communicate information.

**Course Number and Name:**                    **WBL 292(1-3) Work Based Learning**

**Description:**                                    A structured work-site learning experience in which the student, program area teacher, work-based learning coordinator, and work-site supervisor/mentor develop and implement an educational training agreement. This site is designed to integrate the student's academic and technical skills into a work environment, and may include regular meetings and seminars with school personnel for supplemental instruction and progress reviews. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours.

**Hour Breakdown:**

Semester Credit Hours	Lecture	Externship	Contact Hours
1		3	45
2		6	90
3		9	135

**Prerequisite:**                                    Instructor Approved Technical Elective

**Student Learning Outcomes:**

1. Apply technical skills and related academic knowledge needed to be a viable member of the workforce.
  - a. Demonstrate technical skills necessary to complete job requirements.
  - b. Demonstrate academic skills necessary to complete job requirements.
  - c. Perform tasks detailed in an educational training agreement at the work setting.
  - d. Demonstrate knowledge of employability skills such as creating cover letters, resumes, etc.
2. Apply general workplace skills to include positive work habits necessary for successful employment.
  - a. Demonstrate appropriate human relationship skills in the work setting to include conflict resolution, team participation, leadership, negotiation, and customer/client service.
  - b. Utilize time, materials, and resource management skills.
  - c. Use critical thinking skills such as problem solving, decision making, and reasoning.
  - d. Acquire, evaluate, organize, maintain, interpret, and communicate information.

**Course Number and Name:**                    **WBL 293(1-3) Work Based Learning**

**Description:**                                    A structured work-site learning experience in which the student, program area teacher, work-based learning coordinator, and work-site supervisor/mentor develop and implement an educational training agreement. This site is designed to integrate the student's academic and technical skills into a work environment, and may include regular meetings and seminars with school personnel for supplemental instruction and progress reviews. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours.

**Hour Breakdown:**

Semester Credit Hours	Lecture	Externship	Contact Hours
1		3	45
2		6	90
3		9	135

**Prerequisite:**                                    Instructor Approved Technical Elective

**Student Learning Outcomes:**

1. Apply technical skills and related academic knowledge needed to be a viable member of the workforce.
  - a. Demonstrate technical skills necessary to complete job requirements.
  - b. Demonstrate academic skills necessary to complete job requirements.
  - c. Perform tasks detailed in an educational training agreement at the work setting.
  - d. Demonstrate knowledge of employability skills such as creating cover letters, resumes, etc.
2. Apply general workplace skills to include positive work habits necessary for successful employment.
  - a. Demonstrate appropriate human relationship skills in the work setting to include conflict resolution, team participation, leadership, negotiation, and customer/client service.
  - b. Utilize time, materials, and resource management skills.
  - c. Use critical thinking skills such as problem solving, decision making, and reasoning.
  - d. Acquire, evaluate, organize, maintain, interpret, and communicate information.

## APPENDIX A: RECOMMENDED TOOLS & EQUIPMENT

### CAPITALIZED ITEMS

1. Surface layout markers (2 per program)
2. Surface layout blockers (2 per program)
3. Surface generator (1 per program)
4. Lens surfacers (4 spindle) (4 per program)
5. Alloy reclaim tanks (2 per program)
6. Lap racks (2 per program)
7. Air lens dryer (1 per program)
8. Surfacers saver tape dispenser (2 per program)
9. Lap blanks, assorted (500 per program)
10. Lensometer (10 per program)
11. Finish layout marker (2 per program)
12. Finish layout blocker (4 per program)
13. Patternless edger, computerized (1 per program)
14. Bevel edger (2 per program)
15. Hand edger (5 per program)
16. 6-Pot lens dye unit (1 per program)
17. I-Care tonometer (1 per program)
18. Lens grooving machine (2 per program)
19. Edge polisher (2 per program)
20. Display tables, 52 in. l x 18 in. w x 32 in. h (5 per program)
21. Frame bar, rectangular, holds 150 (2 per program)
22. Frame display, hex (2 per program)
23. Fitting tables (2 per program)
24. Frames, glasses, assorted (1,000 pairs per program)
25. Lens cabinet, holds 1,500 pair (1 per program)
26. Workbench (12 per program)
27. Computer (1 per 4 students)
28. Printer, laser (1 per 2 computers)
29. Computer workstation (1 per computer)

### NON-CAPITALIZED ITEMS

1. Pattern racks (2 per program)
2. Frame warmers (glass beads) (2 per program)
3. Spectrometer (1 per program)
4. Gradient machine for dye units (2 per program)
5. Hand tools, assorted set (12 sets per program)
6. Lens holders for dye unit (10 per program)
7. Chairs, patient (2 per program)
8. Stools, optician (2 per program)
9. Frame warmers, hot air (2 per program)
10. Reception chairs (5 per program)
11. Axis pliers (4 per program)
12. Lens calipers (4 per program)
13. Ruler, in millimeter graduations (20 per program)
14. Screwdriver, optical (20 per program)
15. Lap gauge (1 per program)
16. Saggita gauge (1 per program)
17. Hand tools, mechanics set (1 set per program)
18. Stools, laboratory (12 per program)
19. Computer chair (1 per program)

20. File cabinets (2 per program)
21. Desk, student (20 per program)
22. Desk, teacher (1 per program)
23. Chair, teacher (1 per program)
24. Office desk and chair set (1 set per program)
25. Snellen charts (visual acuity) (5 per program)
26. Corneal reflex pupilometers (2 per program)
27. Eye model (1 per program)
28. VCR/DVD player (1 per program)
29. Monitor, TV, 31 in. color (1 per program)
30. Book shelves, library-type (2 per program)
31. Color vision test (1 per program)
32. Depth perception test (1 per program)

## APPENDIX B: CURRICULUM DEFINITIONS AND TERMS

- Course Name – A common name that will be used by all community colleges in reporting students
- Course Abbreviation – A common abbreviation that will be used by all community and junior colleges in reporting students
- Classification – Courses may be classified as the following:
  - a. Career Certificate Required Course – A required course for all students completing a career certificate.
  - b. Technical Certificate Required Course – A required course for all students completing a technical certificate.
  - c. Technical Elective – Elective courses that are available for colleges to offer to students.
- Description – A short narrative that includes the major purpose(s) of the
- Prerequisites – A listing of any courses that must be taken prior to or on enrollment in the course
- Corequisites – A listing of courses that may be taken while enrolled in the course
- Student Learning Outcomes – A listing of the student outcomes (major concepts and performances) that will enable students to demonstrate mastery of these competencies
- The following guidelines were used in developing the program(s) in this document and should be considered in compiling and revising course syllabi and daily lesson plans at the local level:
- The content of the courses in this document reflects approximately 75% of the time allocated to each course. The remaining 25% of each course should be developed at the local district level and may reflect the following:
  - a. Additional competencies and objectives within the course related to topics not found in the state framework, including activities related to specific needs of industries in the community college district
  - b. Activities that develop a higher level of mastery on the existing competencies and suggested objectives
  - c. Activities and instruction related to new technologies and concepts that were not prevalent at the time the current framework was developed or revised
  - d. Activities that include integration of academic and career–technical skills and course work, school-to-work transition activities, and articulation of secondary and postsecondary career–technical programs
  - e. Individualized learning activities, including work-site learning activities, to better prepare individuals in the courses for their chosen occupational areas
- Sequencing of the course within a program is left to the discretion of the local college. Naturally, foundation courses related to topics such as safety, tool and equipment usage, and other fundamental skills should be taught first. Other courses related to specific skill areas and related academics, however, may be sequenced to take advantage of seasonal and climatic conditions, resources located outside of the school, and other factors. Programs that offer an Associate of Applied Science Degree must include all of the required Career Certificate courses, Technical Certificate courses **AND** a minimum of 15 semester hours of General Education Core Courses. The courses in the General Education Core may be spaced out over the entire length of the program so that students complete some academic and Career Technical courses each semester. Each community college specifies the actual courses that are required to meet the General Education Core Requirements for the Associate of Applied Science Degree at their college.

- In order to provide flexibility within the districts, individual courses within a framework may be customized by doing the following:
- Adding new student learning outcomes to complement the existing competencies and suggested objectives in the program framework.
- Revising or extending the student learning outcomes
- Adjusting the semester credit hours of a course to be up 1 hour or down 1 hour (after informing the Mississippi Community College Board [MCCB] of the change)

## APPENDIX C: COURSE CROSSWALK

<b>COURSE CROSSWALK</b> Ophthalmic Technology CIP: 51.1801 Opticianry/Dispensing Optician					
<b><i>Note: Courses that have been added or changed in the 2019 curriculum are highlighted.</i></b>					
Existing			Revised		
2010 MS Curriculum Framework			2019 MS Curriculum Framework		
Course Number	Course Title	Hours	Course Number	Course Title	Hours
OPT 1113	Ophthalmic Optics I	3	OPT 1113	Ophthalmic Optics I	3
OPT 1123	Ophthalmic Optics II	3	OPT 1123	Ophthalmic Optics II	3
OPT 1214	Optics Laboratory Techniques I	4	OPT 1214	Optics Laboratory Techniques I	4
OPT 1224	Optics Laboratory Techniques II	4	OPT 1224	Optics Laboratory Techniques II	4
OPT 1313	Laboratory Management and Inventory Control	3	OPT 1313	Laboratory Management and Inventory Control I	3
OPT 1323	Business Management for Opticians	3			
			OPT 1333	Introduction to Ophthalmic Assistance	3
OPT 1413	Ophthalmic Dispensing I	3	OPT 1413	Ophthalmic Dispensing I	3
OPT 2423	Ophthalmic Dispensing II	3	OPT 2423	Ophthalmic Dispensing II	3
OPT 2433	Ophthalmic Dispensing III	3	OPT 2433	Ophthalmic Dispensing III	3
OPT 2513	Optical Theory and Instrumentation	3	OPT 2513	Optical Theory and Instrumentation	3
OPT 2613	Dispensing Clinic I	3	OPT 2613	Dispensing Clinic I	3
OPT 2623	Dispensing Clinic II	3	OPT 2623	Dispensing Clinic II	3
OPT 2916	Internship	6	OPT 291(3-4)	Externship	3-4
ACC 1213	Principles of Accounting I	3			
CPT 1113 or CSC 1113	Fundamentals of Microcomputer Applications or Introduction to Computer Concepts	3			



## APPENDIX D: RECOMMENDED TEXTBOOK LIST

<b>Recommended Textbook List</b> CIP: 51.1801 Opticianry/Dispensing Optician		
<b>Book Title</b>	<b>Author(s)</b>	<b>ISBN</b>
Self-Study Course for Paraoptometric Assistants and Technicians	The American Optometric Association	ISBN: 0-7506-9473-4
System for Ophthalmic Dispensing 3 <sup>rd</sup> edition	Clifford W. Brooks & Irvin M. Borish	ISBN 13: 978-0-7506-7480-5 ISBN 10: 0-7506-7480-6
Optical Formulas Tutorial 2 <sup>nd</sup> edition	Ellen Stoner, Patricia Perkins, & Roy Ferguson	ISBN 13: 978-0-7506-7504-8 ISBN 10: 0-7506-7504-7