# Vision Care (VC) II
## COURSE SYLLABUS
## Curriculum Outline

**2023-2024**
**Grades: 10-11**
Prerequisite(s): Vision Care I

### Course Description

**Description:** In this second-level Vision Care course scholars will expand on the skills they learned in year one on the various machines needed to make glasses: lensometer, blocker, and edger. They will start to take on a leadership role in the program as they complete various projects to further their technical skills and knowledge by manufacturing multifocal lenses, repairing broken glasses, and maintaining the manufacturing equipment in the lab. In this course, they will strengthen their professional skills and patient care skills by working with visiting eye doctors and assisting them with patient exams and patient care. Vision care screening skills include; measuring patients' pupillary distances, helping patients pick out frames that fit their facial structure, and maintaining patient records (prescriptions). As part of these visits, they will protect the privacy of protected health information as outlined in federal HIPPA regulations. Throughout the year they will maintain and improve upon their vision care skills by manufacturing a variety of glasses that fit an optometrist-supplied prescription and dispensing fabricated glasses to students.

### Course Units/Skills & Knowledge

**This course is broken into 4 units:**

| |
|---|
| **UNIT 1: Manufacturing and Machine Maintenance** |
| **UNIT 2: Clinical Skills** |
| **UNIT 3: Dispensing** |
| **UNIT 4: Multifocal Lenses** |

| SEPT | OCT | NOV | DEC | JAN | FEB | MARCH | APRIL | MAY | JUNE |
|---|---|---|---|---|---|---|---|---|---|
| Unit 1 Manufacturing and Machine Maintenance | | Unit 2 Clinical Skills | | | Unit 3 Dispensing | | Unit 4 Multifocal Lenses | | |

**Grading**

20% - Career Readiness, 30% - Classwork, 50% - Performance Tasks/Assessments

## UNIT 1: MANUFACTURING AND MACHINE MAINTENANCE

**UNIT 1 UNDERSTANDINGS:**

1. Precision techniques are used to calibrate and maintain optical manufacturing equipment
2. Specific tools and steps are needed to produce prescription eyewear
3. There are multiple opportunities for success in the optical industry and multiple pathways to get to a place that is best for you

| Knowledge | Skills |
|---|---|
| Scholars will know…<br>● How to integrate different pieces of information necessary to make a pair of eyeglasses<br>● The steps to move the align the blocking chuck with the layout screen to calibrate the blocker<br>● When and how to clean the edging wheels<br>● Inventory and documentation | Scholars will be skilled at…<br>● Utilize leadership to think purposefully and advocate for self and others to help prepare students to become role models.<br>● Manufacture multiple pairs of glasses for patients that exceed ANSI Standards<br>● Correctly use and maintain optical manufacturing equipment<br>● Recognize and collect the information necessary to make a quality pair of glasses<br>● Calibrating and maintaining optical manufacturing equipment<br>● Using optical equipment and steps to manufacture eyeglasses that meet ANSI Standards<br>● Utilizing data recording paperwork and forms for patients to record data, recognize workflow issues, and research past patient information<br>● Using the edger and tracer combo systems to cut eyeglasses<br>● Finding lenses and frames from the stock area |

**PERFORMANCE TASK:** *How will students demonstrate their understanding (meaning-making and transfer) through a complex performance task?)*

**Performance Task focused on Transfer:**

Goal Scholars will use skills to determine measurements and information of a finished pair of glasses and search the database to determine the glasses' owner.

Role –Optical Technician

Audience – Mystery scholar who lost glasses

Situation - Scholars will be given a mystery pair of glasses that they must use to determine the prescription, patient PD, and frame PD. The scholar will search an online database of prescriptions to match the glasses to a student who “lost” them.

Product - Scholars must correctly identify the owner of the glasses using the database and provide their reasoning for the identity. They will use the data they found to determine the decentration of the frame.

## UNIT 2: CLINICAL SKILLS

### UNIT 2 UNDERSTANDINGS:

1. Communication skills are essential to building patient relationships.
2. Teamwork in a clinical setting requires understanding both your responsibility and your contribution to patient care as a whole.
3. Many different pieces of information have to be collected to be able to best serve the patient's ophthalmic needs.

| Knowledge | Skills |
|---|---|
| Scholars will know…<br>● The different face shapes and different types of frames that complement those shapes<br>● The similarities and differences between the PD stick and the pupilometer and when to use them<br>● What are autorefractors and how to use the different types that we have here<br>● The roles and responsibilities of staff during a doctor visit at East and how each role affects others<br>● How to work with a patient and create a comfortable positive experience for them.<br>● How to work as part of a team to facilitate the vision care needs of patients<br>● The purpose and use of the various tools necessary for patient care in a vision care setting | Scholars will be skilled at…<br>● Scholars will be able to work with patients professionally to collect vision care-related information<br>● Scholars will be skilled at the use of patient data collection tools and techniques<br>● Scholars will be able to critique frames chosen by a patient and provide feedback to them using professional communication skills<br>● Using the pupilometer to take patient PDs<br>● Working with patients to gather information essential to their ophthalmic needs<br>● Picking frames to match a patient's face shape<br>● How to use the Vision Screener and stationary Autorefractor<br>● Filling out work tickets with essential information |

**PERFORMANCE TASK:** *How will students demonstrate their understanding (meaning-making and transfer) through a complex performance task?)*

**Performance Task focused on Transfer:**
Goal Utilize the skills from this unit to work as a team and staff a Vision Care event at East where patients from East and other RCSD schools come for refractive screenings and
Role – optical technician and/or optician working as part of a vision care team to see patients and complete the work ticket necessary to make glasses for a patient
Audience – Patients from East and various RCSD schools who attend a Vision Care Event at East
Situation – Patients are coming to East for a Vision Care Event where local eye doctors will volunteer their time to perform refractive screenings on patients to generate prescriptions to use to make eyeglasses
Product – Scholars will participate in a mock doctor visit where the classroom is set up as it would be for an actual visit. They will rotate through different stations, acting as both optician and patient and ensure all measurements and essential information is collected. They will transfer these skills to an actual Vision Care event where they will rotate through all stations, working with patients from various skills as they prepare to see a volunteer eye doctor.

## UNIT 3: DISPENSING

**UNIT 3 UNDERSTANDINGS:**

1. Final inspection of finished eyeglasses requires multiple pieces of information, including the patient PD, prescription, location of the optical center, axis, and how these relate to ANSI Standards Z80.1
2. Dispensing of finished eyeglasses to patients includes checking for fit, checking for a positive change to the patient's visual acuity, and instruction on how to care for the patient's prescriptions
3. Tools used to repair damaged eyeglass frames include hand tools, like bent nose snipe pliers and double nylon jaw pliers, and techniques for holding the frames so they are not damaged

| Knowledge | Skills |
|---|---|
| Scholars will know…<br>● How to use the ANSI standards chart to determine the accuracy of a finished pair of glasses<br>● The names of optical tools used to adjust frames – nipping pliers, needle nose pliers, nylon jaw pliers, nosepad adj pliers, square jaw pliers, round jaw pliers, snipe nose pliers, optical screwdriver, chain link pliers<br>● When the temple side of eyeglasses is too high the earpiece needs to be brought up; vice versa for too low<br>● If eyeglasses are sitting too high on a patient's face, pulling the nose pads apart will lower it; vice versa if too high<br>● 3-point touch refers to the frame fitting a patient at nose pads and earpiece<br>● 4 point touch is when a frame is upside down and the ear bends and tops of the eye wires all touch the table | Scholars will be skilled at…<br>● Utilize leadership to think purposefully and advocate for self and others to help prepare students to become role models.<br>● Inspect finished eyeglasses for compliance to ANSI Standards<br>● Dispense finished glasses to a patient and use the correct hand tools and movements to make necessary frame adjustments to ensure proper fit<br>● Using the lensometer to find the accuracy of the prescription and optical center to ANSI standards<br>● Using optical pliers to adjust frames to best fit a patient's face<br>● Setting the frame to 4 4-point touch before dispensing<br>● Final inspecting eyeglasses and checking them using ANSI standards |

**PERFORMANCE TASK:** *How will students demonstrate their understanding (meaning-making and transfer) through a complex performance task?)*

Goal Use the skills from the unit, and an understanding of ANSI standards, to determine the quality of eyeglasses and understand how to work through any issues and fix them

Role – Dispensing Optician

Audience – Patient waiting for their new glasses

Situation – Eyeglasses have just been produced for patients waiting to pick them up. Using ANSI standards, vision care students will determine if the pairs of glasses meet standards and can be dispensed

Product - Scholars will inspect 4 pairs of glasses that each have specific errors compared to the prescription and work ticket provided. They will recognize the errors and note them on the work ticket in the correct place. Scholars will use ANSI Standards Z80.1 to determine if the eyeglasses can be dispensed to a patient or if they have to be remade. Upon successful completion of the task (All pairs of glasses need correctly identified, scholars will make a pair of glasses and utilize ANSI standards Z80.1 to check for accuracy. They will then dispense a pair of glasses to a patient, using the appropriate hand tools to adjust the frames to best fit the patient's face.

## UNIT 4: MULTIFOCAL LENSES

**UNIT 4 UNDERSTANDINGS:**

1. Multifocal lenses have pros and cons, such as aberration, reading abilities, and aesthetics that result in differing levels of success in people with different lifestyles
2. Layout of MF lenses, like single vision lenses, requires decentering horizontally but adds vertical decentration
3. The steps to fitting MF lenses include marking and measuring for vertical height and are important to patient's comfort as well as for manufacturing and dispensing
4. Surfacing and lens molding are different types of manufacturing processes that produce the same result

| Knowledge | Skills |
|---|---|
| Scholars will know…<br>● The difference between a bifocal, trifocal, and progressive multifocal lens and the pros and cons of each<br>● The correct steps to fit a patient for each of the different types of MF lenses and how to record that data<br>● How to use and maintain the lens molding system and the lenses that are part of the system<br>● How to layout and block each of the MF lenses and what to look at to ensure that layout is correct<br>● The steps necessary to ensure that the eyeglasses are correct for the patient and to dispense to the patient | Scholars will be skilled at…<br>● Utilize leadership to think purposefully and advocate for self and others to help prepare students to become role models.<br>● Fit and dispense prescription multifocal eyeglasses to patients<br>● Use manufacturing systems to correctly produce multifocal lenses and eyeglasses<br>● Describe the differences between the various types of multifocal lenses<br>● Taking MF measurements from the patient<br>● Calculating the decentration of MF lenses<br>● Dispensing the manufactured eyeglasses to the patient<br>● Comparing and contrasting different types of MF lenses |

**PERFORMANCE TASK:** *How will students demonstrate their understanding (meaning-making and transfer) through a complex performance task?)*

**Performance Task focused on Transfer:**

Goal Utilize unit skills to make a pair of multifocal (MF) eyeglasses for an adult

Role – Optician helping a patient pick out frames and multifocal lens types based on their lifestyle, take measurements, make lenses and glasses, and dispense to the patient

Audience – Adults in need of a pair of multifocal eyeglasses

Situation – An adult patient needs new MF eyeglasses and the optician has to fit the patient with appropriate frames, take correct measurements, and make them for the patient

Product - Multifocal eyeglasses for a patient that match their desired frame, suggested MF, and Dr's prescription, Multifocal preplanning capture sheet

**STANDARDS**

**NYS CDOS - HEALTH SERVICE**

CDOS.3b.1B- Apply natural sciences to health services

1C. Apply mathematics to health care:

1. Measurement
2. Ratio and proportions

1F- Apply foundation skills:

1. Problem-Solving
2. Critical Thinking
3. Research

CDOS 3b 2A. Health Care Systems: understand the current healthcare system and its impact on health
2B. Understand service delivery settings (e.g., hospital, clinic, laboratory, office, home).
2D. Identify career choices in health care

CDOS.3b.8A- Understand the scope of health care occupations

CDOS 3b 4A Identify and understand legal issues related to health careers:
4B. Identify and understand ethical issues related to health careers:

CDOS 3b 6A Understand medical terminology and abbreviations.
6B. Develop and practice elements of professional communication:
6C. Understand medical documentation:
6E. Develop job-seeking skills:

CDOS 3b 7A. Interpersonal Dynamics: Develop team-building skills and behaviors within the health care setting(s).
7B. Understand functions and roles within a health care team(s).
7C. Develop positive communication skills:
7F. Understand professionalism in the healthcare system:

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NCHSE

**1.3 Medical Mathematics**

1.3.1 Demonstrate competency using basic math skills and mathematical conversions as they relate to healthcare.

**2.1 Concepts of Effective**

2.1.1 Model verbal and nonverbal therapeutic communication.
2.1.2 Identify common barriers to communication.
2.1.4 Interpret elements of the communication process using the sender-message-receiver feedback model.
2.1.5 Modify communication to meet the needs of the patient/client and to be appropriate to the situation.

**2.3 Written Communication Skills**

2.3.1 Use proper elements of written and electronic communication
2.3.2 Prepare examples of technical and informative writing.

**3.1 Healthcare Delivery Systems**

3.1.1 Differentiate healthcare delivery systems and healthcare-related agencies.
3.1.2 Examine the healthcare consumer's rights and responsibilities within the healthcare system.

**4.1 Personal Traits of the Health Professional**
4.1.1 Identify personal traits and attitudes desirable in a career-ready member of a health team

**5.2 Legal Practices**
5.2.1 Apply standards for the safety, privacy, and confidentiality of health information. • HIPAA • Privileged communication

**6.2 Cultural, Social, and Ethnic Diversity**
6.2.2 Demonstrate respectful and empathetic treatment of all patients/clients/families.

**7.1 Infection Control**
7.1.2 Differentiate methods of controlling the spread and growth of pathogens.
b. Standard precautions

**7.2 Personal Safety**
7.2.1 Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.
7.2.3 Demonstrate and apply the use of Personal Protective Equipment (PPE)

**8.1 Healthcare Teams**
8.1.1 Evaluate roles and responsibilities of healthcare team members.
8.1.2 Identify characteristics of effective teams.

**8.2 Team Member Participation**
8.2.1 Recognize methods for building positive team relationships.
8.2.2 Analyze the attributes and attitudes of an effective leader.
8.2.3 Apply effective techniques for managing team conflict.
2.4 Evaluate why teamwork is an important part of healthcare and how it improves patient care

**9.2 Healthcare Across the Lifespan**
9.2.1 Discuss physical, mental, social, and behavioral development and its impact on healthcare.
9.2.2 Identify socioeconomic determinants of health and wellness.

**10.1 Technical Skills- Vision Care***
10.1.1 Demonstrate procedures for measuring and recording eyesight in both normal and abnormal ranges - including but not limited to

- Pupillary distance
- Nearsightedness (myopia), a condition that makes far away things look blurry.
- Farsightedness (hyperopia), a condition that makes close-up things look blurry.
- Astigmatism, which causes generally blurry vision and makes it hard to see at night.
- Presbyopia (only in middle-aged adults and older), this condition makes it hard to see things up close.
- Glaucoma

10.1.2 Obtain training on

- Lensometer
- Blocker
- Edger

**11.1 Key principles, components, and practices of health information systems (HIS)**
11.1.3 Create electronic documentation that reflects timeliness, completeness, and accuracy.
11.1.4 Examine information systems policies, procedures, and regulations as required by national, state, and local entities