

OPT 2420 EYEWEAR FABRICATION 1

Course Description

Fabrication is the process of making lenses. The course introduces fabrication terminology and processes. The course also teaches the theory of ophthalmic surfacing and finishing formulas, and procedures to understand how lens power is calculated and lenses created. Students will also learn the theory of lens aberration, lens safety testing and the standards that govern the manufacturing of lenses, American National Standards Institute.

Course Competency	Learning Outcomes
<p>Competency 1: The student will learn the theory of what fabrication entails by:</p>	<p>Communication Numbers / Data</p>
<ol style="list-style-type: none"> 1. listing the steps in the fabrication process. 2. recognizing and identifying the equipment, supplies and tools needed for fabrication. 3. explaining the terminology used in an ophthalmic laboratory. 	
<p>Competency 2: The student will learn the theory of what creates lens power, surface power, and the formulas needed in the fabrication process by:</p>	<p>Communication</p>
<ol style="list-style-type: none"> 1. explaining lens curves (front, back, total power, and base curves). 2. calculating surfacing formulas. 3. calculating power formulas. 4. explaining aberrations. 5. explaining the power cross and how it relates to the patient prescription. 	
<p>Competency 3: The student will learn to explain if the eyewear made by the laboratory is dispensable to the patient by:</p>	<p>Communication Numbers / Data</p>
<ol style="list-style-type: none"> 1. explaining ANSI Standards (American 	

<p>National Standards Institute).</p> <ol style="list-style-type: none"> 2. calculating Prentis' Rule. 3. comparing Prentis' Rule calculation with ANSI Standards and being able to explain if glasses meet ANSI standards. 	
<p>Competency 4: The student will learn how to explain the difference between traditional (molded) lenses, free form lenses, and digital lenses by:</p>	<p>Communication</p>
<ol style="list-style-type: none"> 1. explaining traditional molded lenses (single vision and multifocals). 2. explaining free form and digital lens manufacturing. 	
<p>Competency 5: The student will learn about progressives by:</p>	<p>Communication</p>
<ol style="list-style-type: none"> 1. explaining about the major points on the lens. 2. explaining about the methods to measure a progressive on a patient. 3. explaining about the tools needed to measure a progressive on a patient. 4. explaining how to identify and locate the lens markings. 5. explaining how to adjust a progressive on a patient and consider face form and pantoscopic tilt. 6. explaining to the patient how to best use the lens to be a successful wearer. 7. explaining errors to avoid and how to troubleshoot when patients complain. 8. explaining ANSI Standards of a multifocal and a progressive and how they differ from a single vision lens. 	
<p>Competency 6: The student will learn about lens treatments, lab processes, and lens impact resistant standards by:</p>	<p>Numbers / Data</p>
<ol style="list-style-type: none"> 1. explaining heat treatments, tempering, and drop ball testing requirements. 2. explaining the different types of eyewear (dress, safety). 	

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| <ol style="list-style-type: none">3. recognize the frame labeling per the manufacturer.4. explaining the impact resistance standards and methods to ensure safety. | |
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