

BROWARD COLLEGE COURSE OUTLINE

LAST REVIEW: 2009-2010

NEXT REVIEW: 2014-2015

STATUS: A

COURSE TITLE: EYEWEAR FABRICATION II

COMMON COURSE NUMBER: OPT 2421

CREDIT HOURS: 1

CONTACT HOUR BREAKDOWN

CLOCK HOURS:

Lecture: 16

Lab:

Clinic:

Other:

PREREQUISITE(S): OPT 2420, OPT 2420L

COREQUISITE(S):

PRE or COREQUISITE(S): OPT 2421L

COURSE DESCRIPTION

Advanced techniques in measurement, fabrication and verification of single vision and multifocal lenses are discussed. Theory of ophthalmic surfacing, and finishing procedures from written specifications are explored, ensuring that current ANSI and FDA standards are exceeded.

UNIT TITLES

1. LENSOMETER FOR THE STATE BOARD
2. VERTEX CHANGE
3. CALIPERING
4. LENS CLOCK
5. ANSI STANDARDS
6. BENCH ALIGNMENT
7. SPOTTING LENSES
8. CENTRATION OF SINGLE VISION LENS
9. CENTRATION OF BIFOCAL VISION LENS
10. BLOCKING OF FINISHED LENSES
11. LENS SHAPE INFORMATION
12. EDGING
13. TINTING

BROWARD COLLEGE COURSE OUTLINE

OPT 2421

Unit 1: LENSOMETER FOR THE STATE BOARD

General Outcome:

1.0 The student will review the principles of lensometry and apply the standards used in the state board examination.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 List the major systems of the Lensometer.
- 1.2 Describe the functions of each system.
- 1.3 List the steps in neutralizing a single vision lens.
- 1.4 List the steps in neutralizing a bifocal lens.
- 1.5 List the steps in neutralizing a progressive lens.
- 1.6 List the steps in neutralizing prism.
- 1.7 Describe four (4) refractive errors and how they are corrected.

Unit 2 VERTEX DISTANCE CHANGE

General Outcome:

2.0 The student will be able to discuss the effect vertex distance changes have on a prescription.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 2.1 Calculate effective power of a lens
- 2.2 Discuss how effective power affects vision
- 2.3 Calculate replacement power of a lens
- 2.4 Discuss how replacement power affects vision

Unit 3 & 4 CALIPERING AND LENS CLOCK

General Outcome:

3.0 and 4.0 The student will be able to identify and discuss the process of “clocking” and callipering a lens.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 3.1 Discuss the importance of callipering every lens.
- 3.2 Describe the use of the manual and automatic caliper.
- 3.3 Describe the use of the lens clock.

BROWARD COLLEGE COURSE OUTLINE

OPT 2421

Unit 5 ANSI/STATE BOARD STANDARDS

General Outcome:

5.0 The student will be able to discuss the American National Standards Institute (ANSI) regulations regarding the manufacture and sale of ophthalmic devices.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 5.1 Differentiate between (ANSI) standard and the State board requirements.
- 5.2 List the ANSI standards for dress and safety eyewear.
- 5.3 List the Florida board standards for dress and safety eyewear.

Unit 6 BENCH ALIGNMENT

General Outcome:

6.0 The student will demonstrate a working knowledge of the procedure used in “truing” or placing the frame in a standard alignment.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 6.1 Demonstrate “truing” or standard alignment.
- 6.2 Correctly heat and reshape a frame.
- 6.3 Align the bridge of a plastic frame.
- 6.4 Place a plastic frame in correct “four-point” touch.
- 6.5 Align of the temples in a plastic frame.
- 6.6 Correct temple spread problems for a plastic frame.
- 6.7 Align temple-fold angle of a plastic frame.
- 6.8 Align the bridge of a metal frame.
- 6.9 Place a metal frame in proper “four-point” touch.
- 6.10 Align the temples of a metal frame.
- 6.11 Correct temple spread problems for a metal frame.
- 6.12 Align temple-fold angle of a metal frame.

OPT 2421

Unit 7 SPOTTING LENSES

General Outcome:

7.0 The student will be able to discuss the procedures for spotting, verification and checking for optical quality of a finished lens.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 7.1 Describe how to spot and verify the power of a lens.
- 7.2 Describe how to spot a lens with prism.
- 7.3 Discuss the markings of a progressive addition lenses.

Unit 8 CENTRATION OF SINGLE VISION LENS

General Outcome:

8.0 The student will be able to describe the process of edging a single vision lens.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 8.1 Discuss the purpose of centering.
- 8.2 Determine if a lens blank is large enough.
- 8.3 Discuss how to push the P.D.
- 8.4 Calculate decent ration.
- 8.5 Calculate minimum blank size.
- 8.6 measure the effective diameter.

Unit 9 CENTRATION OF BIFOCAL VISION LENS

General Outcome:

9.0 The student will be able to describe the process of edging a bifocal lens.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 9.1 Discuss the purpose of centering.
- 9.2 Determine if a lens blank is large enough.
- 9.3 Discuss how to measure seg hight.
- 9.4 Calculate decent ration.
- 9.5 Calculate seg inset.
- 9.6 Calculate total inset.

OPT 2421

Unit 10 BLOCKING OF FINISHED LENSES

General Outcome:

10.0 The student will be able to compare and contrast various methods for blocking a finished lens in preparation for the edging process.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 10.1 Describe the pressure blocking process.
- 10.2 Describe suction blocking
- 10.2 Discuss how to choose the correct block for the job.

Unit 11 LENS SHAPE INFORMATION

General Outcome:

11.0 The student shall: The student will be able to discuss how to make a lens pattern using the pattern maker

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 11.1 Discuss pattern measurements and terminology.
- 11.2 Discuss pattern making by hand.
- 11.3 Compare various automatic pattern makers.
- 11.4 Discuss pattern- less edging systems.

Unit 12 EDGING

General Outcome:

12.0 The student shall: The student will be able to identify and compare different lens edging systems and procedures.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 12.1 Discuss the edging process.
- 12.2 Describe how to chuck a lens.
- 12.3 Describe bevel selection and placement.

BROWARD COLLEGE COURSE OUTLINE

OPT 2421

Unit 12 EDGING continued

- 12.4 Differentiate between various type of lens materials and how the change the edging process.
- 12.5 Identify a safety bevel.
- 12.6 Discuss the importance of a safety bevel.
- 12.7 Discuss how to place it on a finished lens.

Unit 13 TINTING

General Outcome:

13.0 The student shall: The student will be able to apply UV coating and tints to plastic lenses.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 13.1 Demonstrate how to apply UV-400 coatings.
- 13.2 Explain how to verify UV-400 coatings.
- 13.3 Show how to tint a finish lens.
- 13.4 Mix and match tints.