BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS

TENTATIVE AGENDA

June 21, 2023, 9:30 a.m. – Board Room 2, Second Floor

Department of Professional and Occupational Regulation
Perimeter Center, 9960 Mayland Drive
Richmond, Virginia 23233

I. CALL TO ORDER

II. EMERGENCY EVACUATION PROCEDURES

III. APPROVAL OF AGENDA

1. Board for Hearing Aid Specialists and Opticians Meeting Agenda, June 21, 2023

IV. APPROVAL OF MINUTES

1. Board for Hearing Aid Specialists and Opticians Minutes from December 14, 2022.
2. Board for Hearing Aid Specialists and Opticians, Optician Regulatory Review Committee Minutes from December 14, 2022
3. Board for Hearing Aid Specialists and Opticians, Curriculum Review Committee Minutes from February 27, 2023
4. Board for Hearing Aid Specialists and Opticians, Curriculum Review Committee Minutes from March 30, 2023

V. COMMUNICATIONS

1. Letter from Optical Alliance regarding deficiencies with the ABOP and NCLEP
2. Emails from Caly Emerson, VA Dept of Labor and Industry, inquiring about the optician apprenticeship ratio

VI. PUBLIC COMMENT PERIOD *

VII. REPORTS

A. Licensing Statistics
B. Examination Statistics

VIII. REGULATORY ACTION AND BOARD GUIDANCE

A. Regulatory Report

IX. NEW BUSINESS

A. Regulatory Action - Optician Lenses and Frame Standards – Conform to ANSI Standards
B. Notice of Intended Regulatory Action – Opticians Regulatory Review
C. Notice of Intended Regulatory Action – Hearing Aid Specialists Regulatory Review
D. Hearing Aid Specialist Practical Exam
E. Optical Training Institute Curriculum
F. Notice of Intended Regulatory Action - Optician Curriculum Criteria
G. Guidance Document – Related Technical Instruction
H. Registered Apprenticeship Sponsors
I. Proposed Amendment to Expand Training Options for Applicants Revision

X. ADJOURN

2023 MEETING DATES:
WEDNESDAY, AUGUST 16, 2023
WEDNESDAY, NOVEMBER 8, 2023

* 5-minute public comment period, per person, with the exception of any open disciplinary or application files. Persons desiring to attend the meeting and requiring special accommodations/interpretive services should contact the board office at 804-367-8590 at least 10 days prior to the meeting so that suitable arrangements can be made for appropriate accommodation. The Department fully complies with the Americans with Disabilities Act.

PERIMETER CENTER CONFERENCE CENTER
EMERGENCY EVACUATION OF BOARD AND TRAINING ROOMS
(Script to be read at the beginning of each meeting.)

PLEASE LISTEN TO THE FOLLOWING INSTRUCTIONS ABOUT EXITING THE PREMISES IN THE EVENT OF AN EMERGENCY.

In the event of a fire or other emergency requiring the evacuation of the building, alarms will sound. When the alarms sound, leave the room immediately. Follow any instructions given by Security staff

Board Room 1
Exit the room using one of the doors at the back of the room. (**Point**) Upon exiting the room, turn **RIGHT.** Follow the corridor to the emergency exit at the end of the hall.

Upon exiting the building, proceed straight ahead through the parking lot to the fence at the end of the lot. Wait there for further instructions.

Board Room 2
Exit the room using one of the doors at the back of the room. (Point) Upon exiting the room, turn **RIGHT.** Follow the corridor to the emergency exit at the end of the hall.

Upon exiting the building, proceed straight ahead through the parking lot to the fence at the end of the lot. Wait there for further instructions.

You may also exit the room using the side door (**Point**), turn **Right** out the door and make an immediate **Left**. Follow the corridor to the emergency exit at the end of the hall.

Upon exiting the building, proceed straight ahead through the parking lot to the fence at the end of the lot. Wait there for further instructions.

Board Rooms 3 and 4
Exit the room using one of the doors at the back of the room. (**Point**) Upon exiting the room, turn **RIGHT.** Follow the corridor to the emergency exit at the end of the hall.

Upon exiting the building, proceed straight ahead through the parking lot to the fence at the end of the lot. Wait there for further instructions.

Training Room 1
Exit the room using one of the doors at the back of the room. (**Point**) Upon exiting the room, turn **LEFT.** Follow the corridor to the emergency exit at the end of the hall.

Upon exiting the building, proceed straight ahead through the parking lot to the fence at the end of the lot. Wait there for further instructions.

Training Room 2
Exit the room using one of the doors at the back of the room. (**Point**) Upon exiting the doors, turn **LEFT.** Follow the corridor to the emergency exit at the end of the hall.

Upon exiting the building, proceed straight ahead through the parking lot to the fence at the end of the lot. Wait there for further instructions.

BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS
MINUTES OF MEETING

The Board for Hearing Aid Specialists and Opticians met on Wednesday, December 14, 2022, at the Offices of the Department of Professional and Occupational Regulation, Perimeter Center, Board Room 4, 2nd Floor, 9960 Mayland Drive, Richmond, Virginia 23233. The following members were present for the meeting:

Kristina Green, Chair
Debra Ogilvie, AuD, Vice Chair
Darla All
K ytlyn Young
Pa la Chavis, MD
Br e R. Wagner
M hael Armstrong, MD

The following members w not present

Melissa G
Pamela S th
Erik Mel d
Stacey B yboy
Laura Le Thom
Saman Agh rahim

DPOR staff present for all or part of the meeting ncluded:

Kishore Thota, Chief D puty D cto
Stephen Kirschner, Executiv Director
Tamika Rodriguez, Regulatory Operations Administrato
Heather Garnett, Administrative Coordinator

A representative from the Office of the Attorney General was not present r the meeting.

Call to Order

Ms. Green determined that there was a quorum present, and called the meeting to order at 9:36 a.m.

Mr. Kirschner introduced ABO-NCLE President James Morris and new DPOR staff, Kerri O'Brien, Communications and Digital Media Manager.

Approval of Agenda

Upon a motion by Ms. All and seconded by Ms. Young, the Board voted to approve the Agenda.

The members voting 'yes' were, Ms. Green, Dr. Ogilvie, Mr. Wagner, Dr. Chavis, Dr. Armstrong. There were no negative votes. The motion passed unanimously.

Upon a motion by Ms. Young and seconded by Dr. Ogilvie, the Board voted to approve the minutes of the August 17, 2022, Board for Hearing Aid Specialists and Opticians Meeting

Approval of Minutes: August 17, 2022 Board for Hearing Aid Specialists and Opticians Meeting

The membe voting yes' were Ms. All, Dr. Chavis, Ms. Green, Dr. Armstron and Mr. Wa er. There were no negative votes. The motion passed nanimously.

Dr. C vis noted tha he min should reflect that she requested a printout f the 201 ANICI andar Upon a motion by Dr. Chavis and seconded by Ms. All Board vot d to approve the minutes of the November 1, 2022, Op ian egulatory R view Committee Meeting as amended.

Approval of Minutes: November 1, 2022 Board for Hearing Aid Specialists and Opticians Meeting

The members voting 'yes' we Ms. Green, Ms. Young, Dr. Ogilvie, Mr. Armstrong, and Mr. Wag r. There were n ative votes. The motion passed unanimously.

Upon a motion by Mr. Wagner and seconded y D , Ogilvie, th Board voted to approve the minutes of the Novembe , 2022, H ring Aid Specialist Regulatory Review Committee Mee ng.

Approval of Minutes: November 3, 2022 B ard for Hearing Aid Specialists and Optic ns Meeting

The members voting 'yes' were Ms. All, Dr. Chav , Ms. een, Ms. Young, Dr. Armstrong. There were no negativ votes. The motion passed unanimously.

There were no communications.

Communications

James Morris, President of ABO-NCLE, addressed the board regarding the written and practical exam.

Public Comment

There were no licensing or disciplinary cases to be heard.

CASES

REPORTS

Mr. Kirschner reviewed Hearing Aid Specialists and Opticians licensing statistics with the Board.

Licensing Statistics

Examination Statistics

Ms. Garnett reviewed the Hearing Aid Specialist's and Opticians examination statistics for all exams administered between December 2021 and December 2022. The Board discussed the exam pass rates.

Notice of Intended Regulatory Action - Optician Licensing Fees

Ms. Rodriguez reported to the Board on the need to increase the optician fees in addition t the pending hearing aid specialist fee increase. She reported that th B rd is currently operating at a loss, and fee increases were neede She p ovided a chart showing several fee options proposed y the DPOR Finance Section. The Board discussed the differ fee proposals.

Upon motion by M All and nded by Dr. Armstrong, the Board voted to itiate a gulatory tion t adopt fee proposal B.

The members voting s re Dr. Ch is, Ms. Green, Dr. Ogilvie, Mr. Wagner and Ms oung. T re were o negative votes. The motion passed unanimously.

Tympanometry on ILE

Mr. Kirschner reported to the Boa hat he ILE vers interpretation of tympanometry results but does not test on he tual proced re. The Board discussed this topic. Dr. Armstrong sugg ed that thi roc dure could be safely conducted by hearing aid pecialist with prop r training, were it included in their scope of pra ice. In sp nse to staff inquiry, the Board members did not express any oncern with the tympanometry content on the ILE exam.

Over the Counter Hearing Aid Act

Mr. Kirschner presented on the necessary changes to the hearing aid specialist regulations to bring it into compliance with the federal OT Hearing Aid regulations. He stated that Board Regulation 18 VAC 80-20-270.1.c should be amended as follows to imposed discipline for "Employing to fit or sell prescription hearing aids a person who does not hold a valid license or a temporary permit as required by law, or whose license or temporary permit is suspended;…." Mr. Kirschner report that this would likely be an exempt regulatory action due to the change in federal law.

Upon a motion by Ms. Young and seconded by Mr. Wagner the Board voted to approve the proposed change to the regulation.

The members voting 'yes' were Ms. All, Dr. Chavis, Ms. Green, Dr. Ogilvie, and Dr. Armstrong. There were no negative votes. The motion passed unanimously.

NEW BUSINESS

Mr. Kirschner ep rted to the Board regarding the use of analog audiometer n the ex m. The Board discussed whether to begin using digital a iometers on he exams. The board consensus was that applic ts should be test on the equipment they will use in the clinical sett .

Audiometer Use on Exams – Digital vs. Analog

Upon a motion by Dr. Og ie and seco ded by Mr. Wagner the Board voted to authorize the epa ment to be n exploring what steps are needed to begin ting wi digital audiometers, including the formation of an examination c mm e if changes are needed on the exam.

The members voting 'yes' w Ms. All r. Chav , Ms. Green, Ms. Young, and Dr. Armstrong. There e n negativ votes. The motion passed unanimously.

The Board recessed the meeting at 11:00am.

Recess

Dr. Armstrong left the meeting at 11:01am.

Dr. A strong Le es

There no longer being a quorum of the Board, Ms. Green adjourned e meeting at 11:10 a.m.

Adjourn

_____
Kristina Green, Chair

_____
Demetrios J. Melis. Board Secretary

Board for Hearing Aid Specialists and Opticians
Analysis of Fee Structure and Financial Position

Date of Last Fee Increase: 8/1/2005
Date of Last Fee Decrease: 10/1/2003

Fee Structure

Fee Type		Current Fees	Proposal A	Proposal B	Proposal C	Proposal D
New Applicant	H ng Aid Specialist	30	125	125	150	125
New Applicant	earing Aid Specialist by R iprocity	140	125	125	150	125
New Applicant	ecialist Temporary Pe	30	125	125	150	125
Renewal	He g Aid Specialis	20	125	125	150	125
Reinstatement	Hearin id Sp	30	125	125	150	125
Exam	Hearing Aid pecialist	125	125	125	125	125
Re-exam	Hearing Aid Specialist	125	125	125	125	125
New Applicant	Optician	100	100	125	150	140
Renewal	Optician	100	100	125	150	140
Late Renewal	Optician	25	35	35	35	25
Reinstatement	Optician	100	100	125	150	140
Duplicate Wall Certificate		35	35	35	35	35
Certificate of Licensure			35	35	35	35
Bad Check Fee		50	50	50	50	50

Financial Position

	Actual 2020-22 Biennium	Projected 2022-24 Current Fees	Projected 2024-26 Current Fee	Proj d 2 26 os A	Projected 2024-26 P posal B	Projected 2024-26 Proposal C	Projected 2024-26 Proposal D
Cash Carryforward	-866	-45,402	-124,046	-124,0	4 046	-124,046	-124,046
Revenues	226,725	239,229	239,068	344,487	391,9	464,829	419,101
Expenditures	271,261	317,873	327,374	327,374	32 4	327,374	327,374
Balance	-45,402	-124,046	-212,353	-106,934	59,427	13,408	-32,319
The year the board's cash position recovers from the deficit			Never	Never	Y2028	FY2026	FY2027

NOTES:

Per the Callahan Act, the maximum cash balance is $100,000
Proposal A - Keeps the Hearing Aid Specialist fees moving forward at the $125 and makes no changes to the Opticians fees, does not recover from the deficit
Proposal B - Keeps the Hearing Aid Specialists at the approved amount of $125 and increases Opticians to an equal fee of $125., recovers from the deficit in FY28.
Proposal C - Raies both professions' fees to $150 to rapidly recover from the deficit in FY2026 but would require a fee reduction action in FY2027.
Proposal D - Keeps the Hearing Aid Specialists proposed fees at $125 and raises the Opticians fees to $140. Recovers from the deficit in FY2027. May need a fee reduction action in FY2029.

Proposal B is the most equitable to the professions, keeps the cash balance in good position for years into the future, but takes the longest to recover from the deficit.
Proposal D is a viable option but is slightly inequitable to Opticians and recovers from the deficit one year sooner than B.

BOARD FOR HEARING AID SPECIALIST AND OPTICIANS
OPTICIAN REGULATORY REVIEW COMMITTEE

MINUTES OF MEETING

The Board for Hearing Aid Specialist and Opticians, Optician Regulatory Review Committee met on Wednesday, December 14, 2022, at the Offices of the Department of Professional and Occupational Regulation, 9960 Mayland Drive, 2nd Floor, Board Room 4, Richmond, Virginia. The following board members were presen

Krist Green
Darla A l
Dr. Pa ela Chavis
Kaytl n Young

he follo ng board members were not present:

Sta Bray y
E k Meland

DPOR staff present for all, or part o he meeting includ

Steve Kirsch er, De Director Licensing & Regulatory Programs
Tamika Rodrig , Regu tory Operations Administrator
Heather Garnett, Administr iv Coordinato

There was no representative from the Office of the ttorney neral prese t for the meeting.

Kristina Green, Chair, called the Board for Hearing Aid Specialist and Opticians, Optician Regulatory Review Committee meeting to order at 11:37 a.m. **Call to Order**

There was no public comment. **Public Comment**

The Committee continued its line-by-line review of the Opticians Regulations to determine if the regulation is necessary to protect the health, welfare, and safety of the public. **Review of the Opticians Regulations**

The committee completed reviewed the Optician Regulations and by consensus referred the recommended changes to the Board.

There being no further business, the meeting adjourned at 12:40 p.m. **Adjourn**

_____

Kristina Green oard Chai

_____

Demetrios J. M i B d Secre y

BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS
CURRICULUM REVIEW COMMITTEE
MINUTES OF MEETING

The Board for Hearing Aid Specialists and Opticians, Curriculum Review Committee met on Monday, February 27, 2023, at the Offices of the Department of Professional and Occupational Regulation, 9960 Mayland Drive, 2nd Floor, Board Room 2, Richmond, Virginia.

The following board mbers of the Curriculum Review Committee were present:

Krist Green
Erik M and
Kaytly Young
Darla ll

The following d mbers w e not pr ent:

Sta Bray y

The following DPOR staff present:

Steve Kirsch r, Deputy Di tor, icensing & Regulatory Programs
Kelley Palma ier, Ex ive Dire or
Tamika Rodrig , Regu tory Operations Administrator
Heather Garnett, Administr iv Coordinato

There was no representative from the Office of the ttorney neral prese t for the meeting.

Kristina Green, Board Chair, called the Board for Hearing Aid Specialists and Opticians, Curriculum Review Committee meeting to order at 10:39 a.m. **Call to Order**

Board members and staff introduced themselves.

Kristina Green opened the Public Comment section of the meeting. **Public Comment**

Brian Diener, Director, Optical Training Institute. Mr. Diener gave a presentation on the Optical Training Institute curriculum.

The Committee discussed Optical Training Institute's curriculum. After discussion of the length of modules, exam process, sponsor involvement in the learning and exam process, instructional hours, and statistic availability, the Committee requested Brian Diener, Director of Optical Training Institute, and Josh MacNamara, Regulatory Consultant of Optical Training Institute to provide the Board with the breakdown in the number of curriculum hours or an **Review of Curriculum**

assurance that 144 hours of related instruction are given for each year of the two year apprenticeship. In addition, the Committee requested a reference list of content used to develop the curriculum.

Upon a motion by Kaytlyn Young and seconded by Darla All, the Committee voted to refer the cu ulum to the Board for approval pending the receipt of additional inform ion t t was requested.

The memb voting "yes" re Kristina Green, Kaytlyn Young, Darla All, and Eric Meland. There wer no negative votes. The motion passed unanimo sly.

Schedule Next Curriculum Review Committee Meeting

The Committe l scussed need to d velop consistent review criteria for the related technical instruct rograms. T e Committee determined it needed additional time to epare r such a scussion at a later meeting.

The Committee agreed to provide a ailable dates for the next meeting.

Adjourn

There being no further business, K stina Green journ d the meeting at 12:08 p.m.

_____

Kristina Green, Board Chair

_____

Demetrios J. Melis, Board Secretary

BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS
CURRICULUM REVIEW COMMITTEE
MEETING MINUTES

The Board for Hearing Aid Specialists and Opticians, Curriculum Review Committee met on Thursday, March 30, 2023, at the Offices of the Department of Professional and Occupational Regulation, 9960 Mayland Drive, 1st Floor Training Room, Richmond, Virginia.

The following board members of the Curriculum Review Committee were present:

Kr ina Green
Erik M land
Kaytly Young
Darla A

The followi board membe were no ent:

Stacey B boy

The following DPOR staff ent:

Kelley Smith, ecutive Director
Tamika Rodri ez, Regulatory Ope ns Administrator
Heather Garn Administrati Coor nator

There was no representative from the Offi f the ttorney eneral present for the meeting.

Kristina Green, Board Chair, called the Board for Hear g Aid Sp alists and Opticians, Curriculum Review Committee meeting to der at 1 m. **Call to Order**

Board members and staff introduced themselves.

Kristina Green opened the Public Comment section of the meeting. **u ic Comment**

James Morris, Executive Director of the American Board of Opticianry (ABO), ga a presentation on ABO & NCLE test development & psychometric overview. Mr Morris expressed that a curriculum should verify minimum competency and mary considerations of assessment should include validity, reliability, and fairness.

Optician Curriculum Criteria Review

The Committee discussed the Optician Regulations, the three Board approved related technical instruction curriculums, and the American Board of Opticianry – National Contact Lens Examiners ("ABO - NCLE") National Opticianry Competency Examination ("NOCE") content outline and test specifications.

Ms. Green, Board Chair, called a break from 11:58 and resumed the review at 12:15.

The Committee dev p draft curriculum criteria for Board consideration consisting of:

- Cours nformation
- Co nt is current with BO-NCLE
- T aining materials
- C rse objectives
- Cou descripti
- Course m s
- Course delivery mobil
- Documentation or urance hat the in uction will meet a minimum of 144 hours for each y of the two nticeship.
- References for course develop ent
- List of individuals, including alifications, used in urse content development.
- Determination of successful mpleti
- Requirements for submitting cu ulum o urricu updates to the Board. A review of the related technical instruction ma o ur every five rs or when changes are made.

The Board agreed that Staff will prepare a draft of th evelop c iculum crite

Schedule Next rriculum Review ommittee Meeting

The Committee agreed to meet before the scheduled Boa meeting on J e 21, 2023, to review the curriculum criteria draft the Staff prepared.

Adjourn

There being no further business, Kristina Green adjourned the meeting at 1:00 p.m

_____
Kristina Green, Board Chair

_____
Demetrios J. Melis, Board Secretary

Recently deficiencies with the American Board of Opticianry Practical (ABOP) and National Contact Lens Examiners Practical (NCLEP) have become apparent and efforts to have frank discussions regarding the shortcomings have not been productive. In my opinion, if these exams are challenged and found lacking in reliability and validity, both the ABO-NCLE and licensing boards will be placed at risk. After a great deal of consideration, I have decided to share my concerns regarding the ABOP/NCLEP with you as individual board members.

- The ABOP/NCLEP appear to be inconsistent with technical guidelines recommended by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education (AERA, APA, NCME; 2014).
- A search of the available published information for the ABOP/NCLEP fails to locate standardized, industry-accepted test development practices and documented steps.
- No protocols are available detailing how items are developed prior to pilot-testing to ensure validity and psychometric quality.
- While the ABOP/NCLEP Handbook claims that each "examination is developed by ABO-NCLE in cooperation with a Content Expert Panel (CEP) composed of carefully selected Subject Matter Experts (SME) in the field," no supporting records can be located.
- The exam items have not been reviewed by Prometric psychometricians or ABO-NCLE board members. While board members are specifically prohibited from participating as SMEs in item development or item review, they are allowed to take the actual exams at no charge.
- There is no indication Prometric psychometricians or ABO-NCLE board members have contact with, or input into, the ABOP/NCLEP exam content.
- No available document details the qualifications for test development staff and SMEs involved in item development or review cycles.
- According to the ABOP/NCLEP Handbook, the "sixty-minute examinations are designed and developed by groups of Certified Opticians and Contact Lens Fitters/Technicians with assistance from an ***independent testing service***." No information regarding this independent testing service, such as testing experience, expertise, liability coverage in case of exam challenges, or staff members, is available for review and no contract for services can be located.
- The simulations were designed as a learning product by Purcell Group, Cincinnati, Ohio. According to a Purcell representative, many of the ABOP exam standards and tolerances were provided by two (2) LensCrafters employees. No independent ABOP SME review of the standards and tolerances is available.
- For the ABOP, seg height, PD, and focimeter portion of the exam, no industry standards, tolerances, or references can be located.
- When the Prometric Intended Range of Item Difficulties (p-value) and Target Value(s) for Item Discrimination Indices are applied to the 2019 exam statistics, 10 (33%) potential problem items are identified in the ABOP and 14 (47%) in the NCLEP. Since adoption, there is no written or verbal report of ABOP or NCLEP problem items.

POINTS FOR DISCUSSION

- When was the decision made to exclude ABO-NCLE board members and Prometric from ABOP/NCLEP exam development and maintenance?
- What testing service and/or individual is responsible for insuring the ABOP/NCLEP follow AERA, APA, and NCME guidelines?
- If the ABOP/NCLEP are found to be in non-compliance with AERA, APA, and NCME guidelines, what is the potential liability for the ABO-NCLE and licensing boards?
- If exam content from the ABOP/NCLEP is challenged by a licensing board or examinee, what testing service and/or individual is responsible?
- What policies does the ABO-NCLE have in place to comply with an ABOP/NCLEP audit by independent psychometricians and subject matter experts? Does documentation exist to support such a review?
- Have the licensing boards been advised that Prometric is not involved with the ABOP/NCLEP development? If not, is this a potential liability?
- Most licensing boards are composed of individuals with little or no testing expertise. While this lowers the possible of demands for an audit by independent psychometricians, the possibility can't be ruled out. Should the ABO-NCLE pursue options to protect the organization?
- If the ABOP/NCLEP are incorporated into the basic exams, does that relieve the board from liability arising from the current tests?

Motion: To confirm the American Board of Opticianry Practical and National Contact Lens Examiners Practical are consistent with technical guidelines recommended by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education, an item analysis/audit will be performed on the ABO and NCLE practical exam item banks and the 2019, 2020, 2021, and 2022 exams. This item analysis/audit will be supervised by Prometric, or Prometric designated, psychometricians, utilize Prometric or equivalent equipment, and open to all ABO-NCLE board members who volunteer to serve as subject matter experts.

This will be a roll call vote.

Tue, Jun 21, 2022 10:08 am
[redacted]
([redacted] Details
Hi Carri
Would you please place an item regarding Prometric Statistics on the Basic or Practical Exam Committee? Thanks for your help.
Roy

Wed, Jun 22, 2022 9:13 am
[redacted]
To:you Details
Hi Roy,
Yes I can add this item. I want to make sure that we have the information needed to have a meaningful discussion so can you share with me what your questions and/or thoughts are?
Thank you,
Carri

Wed, Jun 22, 2022 10:43 am

Hi Carrie

For the past three or so years I've attempted to make sense of the ABO and NCLE practical exams since the board is not allowed to participate in item development or item review. At the 2020 meeting we were permitted to see all 2019 test statistics, but not the actual practical exams. We remain totally in the dark.

After a great deal of digging, I've discovered that neither Prometric nor the ABO-NCLE has oversight over these two exams. According to the ABO-NCLE website, these exams were "designed and developed by groups of Certified Opticians and Contact Lens Fitters/Technicians with assistance from an independent testing service." There are no records identifying the independent testing service. This raises several flags, not the least of which involves financial liability and test validity.

At the last meeting I was trying to make a motion asking that the board do an investigation and withdrew the action after there was little to no board interest. In that discussion, Jim stated that he had never seen a referred problem item from either of the practical exams. That is most likely true since neither Prometric nor the ABO-NCLE participates in this testing. The party responsible for these exams has never been identified and there is no indication proper item analysis has been performed.

When the Prometric Intended Range of Item Difficulties (p-value) and Target Value(s) for Item Discrimination Indices are applied to the 2019 exam statistics, 10 (33%) potential problem items are identified in the ABOP and 14 (47%) in the NCLEP. There

is no written or verbal record of problem items being reported to the ABO-NCLE board since adoption of these two exams.

This is a serious problem we need to discuss as a board. My request to you is that the background information I've attached not be shared prior to the meeting. I would prefer an open discussion over this topic and my fear is that if Jim is made aware of the content, he will shut it down.

If these exams are challenged and the ABO-NCLE is unable to defend the content, it will destroy our credibility as a certifying body. With no intended hyperbole, this loss would doom Opticianry as we know it. The problems must be faced and corrected.

Roy

Thu, Jun 23, 2022 9:21 am [redacted]

This is a long story that would be best served with an in-person meeting. Please feel free to make a list of questions for that get-together. Until then, I'll give you a thumbnail overview.

At the first meeting in 2020, I presented a short PowerPoint to the board about how items are evaluated for the Basic and Advanced. This was based on the standards I had been taught and used over the years. I later found my psychometric requirements were higher than Prometric, but that's normal since these are more of a range than an actual cutoff. This presentation was created and given to the board because I realized the members had no idea what the statistics meant.

This was when I found the board is not permitted to see or participate in the development of either Practical exam. Curt asked Jim why board members hadn't seen the internal workings of these since we worked on both the Basic and Advanced. Jim told him we were not allowed see it, but we could take the Practical exam at no charge if we wanted to see the content. That grabbed my attention.

I took the exams later and noticed troubling quirks that I dutifully reported to Bill Underwood for investigation and correction. Simply, I couldn't understand how these made it past the subject matter experts during item writing, development, and review. Also, these problems should have been picked up by any competent psychometrician, so I began to doubt the capabilities of Prometric. In the end, no changes were made.

In July of 2020, I took the ABO practical not to pass or fail; it was taken from the standpoint of an examinee and a psychometrician. According to the notes I made following the test, approximately 50% of the content was flawed.

At the summer board meeting in Key West, I approached Jim during the practical exam portion and presented him with a paper generated to address three areas of concern. His reply was that I should have brought these up during the item review. This directly contradicted what he had earlier told Curt. I've attached a copy of this paper for your review. By the way, the tolerances I questioned have been eliminated from the information provided candidates.

The following month I began to question Prometric psychometricians about statistics for the Practical exams. That was when I found Prometric had only conducted the initial validation and cut score determination; their equipment was used for the exams, and the results were released; they did not analyze the statistics. I was unable to pin down where these were delivered and didn't want to place the psychometricians in a compromising position so that route was not followed any further.

This is only a brief glance at what I've managed to piece together. There are several fears that have arisen over the past couple of years. One concern is this information will leak out from the board. This has been moved down the list since it's already been discussed in past meetings and has likely been publicly shared by the board members. We now must have a complete conversation about the exams.

The worst-case scenario would be a challenge from one of the licensing boards or a group of examinees who demand proof of the validity and reliability of these exams. The bottom line is that it's much better for us to address this head-on at this point rather than wait until we are forced to defend the exams. An issue related to all this is the liability of the individual board members. Can we be held accountable for not providing proper oversight?

My concerns can be addressed very easily; let Prometric provide the board proof the exams meet the requirements outlined by AERA, APA, and NCME. They could also provide proof their psychometricians supervise, and monitor item development, item review, and item analysis. If I'm wrong and Prometric provides all these services, the concerns can be dismissed, and we can move on. Of course, the problem is Prometric is not involved.

Now, the natural question would be "how is are the Practical exams developed and administered?" Based on what I've discovered an overall picture has emerged but is not complete due to lack of information. I would rather not engage in supposition, but my impression is not encouraging.

Ask yourself, since you've been a board member how many times have you been invited to participate in item writing sessions, item review, review of problem items, and other matters pertaining to the Basic and Advanced exams? After that, count the times you've been involved in similar activities for the Practical exams. It's easy to spot the difference.

What started out as simple curiosity has now evolved into a major problematic issue for us. Hopefully, when I bring this up at the next meeting simple explanations will be provided and we can move on. Unfortunately, that doesn't appear likely.

Tue, Aug 2, 2022

[redacted] To:you + 2 more Details

TD letter for ABOB.pdf (121 KB)

Hi Roy,

After the email that you sent me regarding the concerns that you have with Prometric, I reached out to the team at Prometric and was able to get this letter from them, as well as, this response from them to answer your questions.

I have copied Curt as ABO Chair and Sandy as NCLE Vice Chair since she will be sworn in Winter Board meeting 2023. I have also added this as an agenda item for the Executive Committee to discuss, in detail. I will tell you though that after meetings, reading this information myself, and evaluating the process that we have in place as an organization with them, I do not have concerns about Prometric and/or their ability as a company to protect our exam.

Their website directly quotes, and identifies the entire process as being controlled by each of the designated entities that you reference. As for the psychometricians, they are truly engaged in every single aspect. We have weekly meetings with an entire team of no less than four to five experts from Prometric.

In response to your questions, please see the below simple answers from Prometric's Website. As you, and the entire Board know, Prometric developed our entire JTA and the entire process is governed by the SEPT (which is the actual Standard):

Assembling Specifications For Job Analysis | Prometric (Development of JTA includes APA, AERA, and NCME) (3.)

A job analysis is conducted in accordance with The Standards for Educational and Psychological Testing (1999) (The Standards), a comprehensive technical guide that provides criteria for the evaluation of tests, testing practices, and the effects of test use. It was developed jointly by the American Psychological Association (APA), the American Educational Research Association (AERA), and the National Council on Measurement in Education (NCME). The guidelines presented in The Standards, by professional consensus, have come to define the necessary components of quality testing. Consequently, a testing program that adheres to The Standards is more likely to be judged to be valid and defensible than one that does not.

As stated in Standard 14.14,

"The content domain to be covered by a credentialing test should be defined clearly and justified in terms of the importance of the content for credential-worthy performance in an occupation or profession. A rationale should be provided to support a claim that the knowledge or skills being assessed are required for credential-worthy performance in an occupation and are consistent with the purpose for which the licensing or licensure program was instituted...Some form of job or job analysis provides the primary basis for defining the content domain..." (p.161)

PROMETRIC

July 15, 2022
Re: Test Development Attestation

Jim Morris
American Board of Opticianry and National Contact Lens Examiners
217 N. Upper St. Ste 201
Lexington, KY 40507

Dear Mr. Morris:

All Prometric's test development practices follow strict, documented procedures that adhere to established standards for the testing and certification industries. Compliance with accepted third-party standards ensures that all Prometric products and services demonstrably meet explicit criteria in multiple areas of importance. These areas include quality control for accuracy and timeliness, validity, assessment creation, test administration, reliability, scale definition, equating and score interpretation. Prometric's proven and reliable development process is consistent with accepted and applicable professional guidelines for validity, which include the *Standards for Educational and Psychological Testing* (AERA, 2014) as well as the certification standards published and enforced by the National Commission for Certifying Agencies (NCCA) and the American National Standards Institute (ANSI).

Sincerely,

Sean O'Donnell
Mid-Market Account Executive

1501 South Clinton Street
Baltimore, Maryland 21224
USA

[redacted]
866 PROMETRIC TOLL FREE
866 776 6387 TOLL FREE

www.prometric.com

Rivera - Carri Rivera, Chair, NCLE, ABO-NCLE
Ferguson - Roy R. Ferguson, PhD, Board, ABO-NCLE
Prometric - Prometric is a provider of technology-enabled testing
Morris - James M. Morris, MPA, JD, Executive Director and General Counsel, ABO-NCLE
O'Donnell - Sean O'Donnell, Mid-Market Account Executive, Prometric

CHRONOLOGY

Jun 21, 2022, Ferguson requested Rivera place an item on the ABO-NCLE Summer agenda Basic or Practical Exam Committee agenda.

Jun 22, 2022, Rivera requested information on questions and/or thoughts.

Jun 22, 2022, Ferguson delivered the background.

July 15, 2022, O'Donnell provided Morris with a Test Development Attestation for the American Board of Opticianry Basic exam.

Aug 2, 2022, Rivera sent an email to Ferguson with O'Donnell attachment entitled TD letter for ABOB.

> *After the email that you sent me regarding the concerns that you have with Prometric, I reached out to the team at Prometric and was able to get this letter from them, as well as, this response from them to answer your questions.*

QUESTIONS

- What concerns with Prometric did Ferguson express?
- According to the Aug 2, 2022, email Rivera states, "I reached out to the team at Prometric and was able to get this letter from them." What team member(s) did Rivera contact and exactly what information was requested?
- If Rivera contacted Prometric, why did O'Donnell reply to Morris?
- Why does the July 15, 2022, letter from O'Donnell to Morris address the American Board of Opticianry Basic **(ABOB)** exam and not the American Board of Opticianry Practical **(ABOP)** and National Contact Lens Examiners Practical **(NCLEP)**?
- For confirmation, call O'Donnell at 443.455.8000 and ask the following questions:
  - What is the name of the ABO-NCLE representative who contacted O'Donnell?
  - Exactly what information was requested?
  - Why was a letter relating to the **ABOB** provided when all Ferguson questions concerned the **ABOP/NCLEP**?
  - Will Prometric and O'Donnell re-write the July 15, 2022, Test Development Attestation letter and state it applies to the **ABOP/NCLEP**? If not; why?
- It appears Rivera has claimed the O'Donnell letter pertains to the **ABOP/NCLEP**. If true, Rivera is misleading Ferguson by leaving out a critical piece of information and allowing him to draw the wrong conclusion.

I have copied Curt as ABO Chair and Sandy as NCLE Vice Chair since she will be sworn in Winter Board meeting 2023. I have also added this as an agenda item for the Executive Committee to discuss, in detail. I will tell you though that after meetings, reading this information myself, and evaluating the process that we have in place as an organization with them, I do not have concerns about Prometric and/or their ability as a company to protect our exam.

*Their website directly quotes and identifies the entire process as being controlled by **<u>each of the designated entities</u>** that you reference. As for the psychometricians, they are truly engaged in every single aspect. We have weekly meetings with an entire team of no less than **<u>four</u>** to **<u>five experts</u>** from Prometric.*

QUESTIONS

- Were Curt and Sandy told the O'Donnell letter to Morris concerned the **ABOB** and not the **ABOP/NCLEP**?
- O'Donnell states Prometric practices "include quality control for accuracy and timeliness, validity, assessment creation, test administration, reliability, scale definition, equating and score interpretation." Are these practices applied by Prometric to the **ABOP/NCLEP**?
- Rivera stated this was added as an agenda item for the Executive Committee to discuss. Is this recorded in the minutes? Was the Executive Committee informed the O'Donnell letter referenced the **ABOB**, not the **ABOP/NCLEP**? Was Prometric involvement in the practical exams discussed?
- How does Prometric protect the **ABOP/NCLEP**?
- Is Prometric under contract to provide test development services for the **ABOP/NCLEP**? If so, what contact person at Prometric can verify this?
- According to Rivera, "We have weekly meetings with an entire team of no less than ***<u>four</u>*** to ***<u>five experts</u>*** from Prometric." Who are the experts, what is their contact information, and how much of this time is spent discussing **ABOP/NCLEP** score interpretation? Who is "we"?
- What designated entities control the **ABOP/NCLEP**?
- During these meetings, did Prometric discuss score interpretation for the 1999 exam results? If so, why wasn't the 33% of the **ABOP** and 47% **NCLEP** problem items discussed? According to Morris, no problem areas from the practical exams have been referred to him. Why did Prometric fail to report the **ABOP/NCLEP** problem items? What Prometric psychometrician is responsible for screening the **ABOP/NCLEP** for problem items?
- For **ABOP** item, AP.6.0.5.2.4.3.801, three (3) examinees chose the correct response while 200 chose the incorrect response, resulting in a p-value of 0.015 and a discrimination of -0.125. What Prometric psychometrician can explain why this was not identified as a problem item?

In response to your questions, please see the below simple answers from Prometric's Website. As you, and the entire Board know, Prometric developed our entire JTA and the entire process is governed by the SEPT (which is the actual Standard):

QUESTIONS

- The August 2, 2022 Rivera email referred to "Assembling Specifications For Job Analysis | Prometric (Development of JTA includes APA, AERA, and NCME)." The inquiry to Rivera concerned 33% of the **ABOP** identified as problem items as well as 47% of the **NCLEP**. Ferguson made no objection to the Job Task Analysis. Please explain how the Job Task Analysis is related to the **ABOP/NCLEP** problem items.
- Did Prometric develop a specific Job Task Analysis for the **ABOP/NCLEP**?
- The Standards for Educational and Psychological Testing (1999) (The Standards), was superseded in 2014. Why did Rivera reference an outdated version?
- As the NCLE Chair, Rivera must know the Job Task Analysis is considered a "test blueprint" and has nothing to do with insuring proper item performance. If true, Rivera is misleading Ferguson by leaving out a critical piece of information and allowing him to draw the wrong conclusion.

PROMETRIC GUIDELINES
Intended Range of Item Difficulties
Target Value(s) for Item Discrimination Indices

ABOP 2019

p-value

p-value (easy to hard)	Item Interpretation	Items
(1) 1.00 to 0.96	***Unacceptable items with minimal measurement value that must be flagged for removal or revision by SMEs***	***5***
(2) 0.90 to 0.95	***Very easy (possibly unacceptable) items: review rpBis for adequate discrimination. May need review by SMEs.***	***3***
(3) 0.89 to 0.80	Fairly easy (acceptable) items: review rpBis to confirm discrimination.	0
(4) 0.79 to 0.40	Hard to moderately easy (acceptable) items: use if rpBis are within specifications.	0
(5) 0.39 to 0.30	Difficult (acceptable) items: review rpBis closely, use if rpBis are within specifications.	0
(6) 0.29 to 0.20	Very difficult (possibly unacceptable) items: review rpBis for adequate discrimination. May need review by SMEs.	0
(7) 0.19 to 0.00	***Unacceptable items: Inappropriately difficult or otherwise flawed. Must be flagged for removal or revision by SMEs. When an item is found to be marginal, developers look at the item's rpBis. If the rpBis is high, more tolerance is given to keep that item on the exam.***	***1***

Discrimination

RpBis (Strong to Weak)	Item Interpretation	Items
(A) 1.00 to 0.50	Very Strong (Acceptable)	0
(B) 0.49 to 0.30	Strong (Acceptable)	0
(C) 0.29 to 0.20	Acceptable (but may need review)	8
(D) 0.19 to 0.10	***Marginal (possibly unacceptable) items: review text and distractors closely.***	***3***
(E) 0.09 to 0.00	Weak (unacceptable) items: p-values are probably very high. Flag for removal or revision by SMEs.	0
(F) -0.01 to -0.20	***Unacceptable items: inappropriately difficult or otherwise flawed. Must be flagged for removal or revision by SMEs. After evaluation of item level statistics, decisions are made on each individual item. Items can be (1) accepted as is and placed in the live exam pool, (2) accepted with modifications and re-entered into the pretest pool, or (3) rejected from further use.***	***2***

10 unique problem items (33%), 14 total

Item ID		Count	p-value	Discrim	Low	Medium	High
(1) (D) **AP.5.2.3.5.0.0.051**					11-19	20-23	24-29
	> A	194	***0.956***	***0.133***	67	73	54
	B	8	0.039	-0.105	3	5	0
	C	1	0.005	-0.098	1	0	0
	D	0	0.000				
(1) (C) **AP.4.1.5.2.6.0.048**					11-19	20-23	24-29
	A	7	0.034	-0.195	5	2	0
	> B	194	***0.956***	**0.239**	64	76	54
	C		0.000				
	D	1	0.005	-0.059	1	0	0
(1) (C) **AP.4.2.5.2.0.0.054**					11-19	20-23	24-29
	A	1	0.005	-0.156	1	0	0
	B	4	0.020	-0.177	4	0	0
	C	2	0.010	-0.028	1	0	1
	> D	196	***0.966***	**0.210**	65	78	53
(1) (D) **AP.4.2.5.2.0.0.058**					11-19	20-23	24-29
	0	1	0.005	-0.137	1	0	0
	> 1	202	***0.995***	***0.137***	70	78	54
(1) (C) **AP.4.2.5.2.0.0.062**					11-19	20-23	24-29
	0	10	0.049	-0.202	8	2	0
	> 1	193	***0.951***	**0.202**	63	76	54
(2) **AP.6.0.5.2.4.1.701**					11-19	20-23	24-29
	A	1	0.005	-0.078	1	0	0
	B	9	0.044	-0.299	8	1	0
	> C	184	***0.906***	0.310	56	75	53
	D	7	0.034	-0.090	4	2	1
(2) (D) **ABOP.2.3.1902**					11-19	20-23	24-29
	0	20	0.099	-0.174	13	5	2
	> 1	183	***0.901***	***0.174***	58	73	52
(2) (C) **ABOP.2.3.1901**					11-19	20-23	24-29
	0	16	0.079	-0.228	11	4	1
	> 1	187	***0.921***	**0.228**	60	74	53
(7)(F) **AP.6.0.5.2.4.3.801**					11-19	20-23	24-29
	0	200	0.985	0.125	69	77	54
	> 1	3	***0.015***	***-0.125***	2	1	0

					11-19	20-23	24-29
(F) **OM. Question.004**							
	0	118	0.581	0.188	29	54	35
>	1	85	0.419	***-0.188***	42	24	19
(C) AP.5.2.6.0.4.3.106					11-19	20-23	24-29
>	A	146	0.719	**0.246**	47	50	49
	B	53	0.261	-0.217	21	27	5
	C	0	0.000				
	D	0	0.000				
(C) P.6.0.5.2.4.1.503					11-19	20-23	24-29
	A	96	0.473	-0.267	45	34	17
>	B	105	0.517	**0.284**	25	43	37
	C	0	0.000				
	D	0	0.000				
(C) AP.4.2.5.2.0.0.162					11-19	20-23	24-29
	0	72	0.355	-0.245	33	29	10
>	1	131	0.645	**0.245**	38	49	44
(C) OM. Question.003					11-19	20-23	24-29
	0	59	0.291	-0.255	30	19	10
>	1	144	0.709	**0.255**	41	59	44
AP.4.2.5.2.0.0.056					11-19	20-23	24-29
	A	4	0.020	-0.118	2	2	0
>	B	130	0.640	0.378	35	47	48
	C	66	0.325	-0.315	31	29	6
	D	1	0.005	-0.059	1	0	0
AP.4.1.5.2.6.0.004					11-19	20-23	24-29
	A	1	0.005	-0.039	1	0	0
	B	0	0.000				
>	C	154	0.759	0.473	37	63	54
	D	47	0.232	-0.463	32	15	0
AP.4.1.5.2.6.0.002					11-19	20-23	24-29
	A	2	0.010	-0.069	1	0	1
	B	1	0.005	-0.039	1	0	0
>	C	146	0.719	0.377	40	57	49
	D	53	0.261	-0.354	28	21	4
AP.4.1.5.2.6.0.401					11-19	20-23	24-29
	0	59	0.291	-0.439	39	20	0
>	1	144	0.709	0.439	32	58	54

					11-19	20-23	24-29
AP.4.1.5.2.6.0.015							
	A	18	0.089	-0.298	13	4	1
>	B	131	0.645	0.385	30	55	46
	C	13	0.064	-0.022	5	5	3
	D	40	0.197	-0.230	22	14	4
AP.5.2.3.5.0.0.057					11-19	20-23	24-29
	A	2	0.010	-0.069	2	0	0
	B	58	0.286	-0.278	27	26	5
>	C	139	0.685	0.323	40	50	49
	D	4	0.020	-0.128	2	2	0
AP.4.1.5.2.6.0.007					11-19	20-23	24-29
>	A	143	0.704	0.494	33	57	53
	B	42	0.207	-0.449	30	11	1
	C	11	0.054	-0.066	4	7	0
	D	7	0.034	-0.157	4	3	0
AP.4.3.5.2.6.0.017					11-19	20-23	24-29
	A	11	0.054	-0.254	8	3	0
	B	27	0.133	-0.342	21	5	1
>	C	162	0.798	0.443	40	70	52
	D	3	0.015	-0.034	2	0	1
AP. 6.0.5.2.4.3.110					11-19	20-23	24-29
	0	65	0.320	-0.401	38	23	4
>	1	138	0.680	0.401	33	55	50
AP.6.0.5.2.4.3.153					11-19	20-23	24-29
	0	82	0.404	-0.431	45	33	4
>	1	121	0.596	0.431	26	45	50
ABOP.3.3.1905					11-19	20-23	24-29
	0	62	0.305	-0.311	38	16	8
>	1	141	0.695	0.311	33	62	46
ABOP.3.3.1910					11-19	20-23	24-29
	0	55	0.271	-0.323	35	14	6
>	1	148	0.729	0.323	36	64	48
ABOP.2.3.1906					11-19	20-23	24-29
	0	54	0.266	-0.300	28	19	7
>	1	149	0.734	0.300	43	59	47

AP.6.0.5.2.4.3.533					11-19	20-23	24-29
	A	106	0.522	-0.314	46	45	15
>	B	95	0.468	0.320	24	32	39
	C	0	0.000				
	D	0	0.000				
AP. 6.0.5.2.4.3.103					11-19	20-23	24-29
	0	115	0.567	-0.509	60	42	13
>	1	88	0.433	0.509	11	36	41
AP.4.2.5.3.0.0.262					11-19	20-23	24-29
	0	117	0.576	-0.262	50	44	23
>	1	86	0.424	0.262	21	34	31

NCLEP 2019

p-value

p-value (easy to hard)	Item Interpretation	Items
(1) 1.00 to 0.96	***Unacceptable items with minimal measurement value that must be flagged for removal or revision by SMEs***	***2***
(2) 0.90 to 0.95	***Very easy (possibly unacceptable) items: review rpBis for adequate discrimination. May need review by SMEs.***	***5***
(3) 0.89 to 0.80	Fairly easy (acceptable) items: review rpBis to confirm discrimination.	0
(4) 0.79 to 0.40	Hard to moderately easy (acceptable) items: use if rpBis are within specifications.	0
(5) 0.39 to 0.30	Difficult (acceptable) items: review rpBis closely, use if rpBis are within specifications.	0
(6) 0.29 to 0.20	***Very difficult (possibly unacceptable) items: review rpBis for adequate discrimination. May need review by SMEs.***	***1***
(7) 0.19 to 0.00	***Unacceptable items: Inappropriately difficult or otherwise flawed. Must be flagged for removal or revision by SMEs. When an item is found to be marginal, developers look at the item's rpBis. If the rpBis is high, more tolerance is given to keep that item on the exam.***	***1***

Discrimination

RpBis (Strong to Weak)	Item Interpretation	Items
(A) 1.00 to 0.50	Very Strong (Acceptable)	0
(B) 0.49 to 0.30	Strong (Acceptable)	0
(C) 0.29 to 0.20	Acceptable (but may need review)	12
(D) 0.19 to 0.10	***Marginal (possibly unacceptable) items: review text and distractors closely.***	***6***
(E) 0.09 to 0.00	***Weak (unacceptable) items: p-values are probably very high. Flag for removal or revision by SMEs.***	***1***
(F) -0.01 to -0.20	***Unacceptable items: inappropriately difficult or otherwise flawed. Must be flagged for removal or revision by SMEs. After evaluation of item level statistics, decisions are made on each individual item. Items can be (1) accepted as is and placed in the live exam pool, (2) accepted with modifications and re-entered into the pretest pool, or (3) rejected from further use.***	***1***

14 unique problem items (47%), 17 total

Item ID		Count	p-value	Discrim	Low	Medium	High
(1) (D) **N.P.7.2.1.2.1.3.009**					12-19	20-22	23-27
	A	0	0.000				
	B	0	0.000				
	C	1	0.007	-0.158	1	0	0
>	D	139	***0.993***	***0.158***	48	48	43
(1) **NP.6.2.7.1.7.3.032**					12-19	20-22	23-27
	A	5	0.036	-0.053	2	2	1
	B	1	0.007	0.039	0	1	0
>	C	134	***0.957***	0.320	47	45	42
	D	0	0.000				
(2) (F) **N.P.1.3.1.2.0.0.003**					12-19	20-22	23-27
	0	7	0.050	0.083	2	0	5
>	1	133	***0.950***	***-0.083***	47	48	38
(2) (D) **NP.5.4.3.2.0.0.017**					12-19	20-22	23-27
	A	7	0.050	-0.048	3	2	2
>	B	128	***0.914***	***0.157***	43	44	41
	C	5	0.036	-0.181	3	2	0
	D	0	0.000				
(2) (C) **N.P.1.3.1.2.0.0.006**					12-19	20-22	23-27
>	A	128	***0.914***	**0.250**	42	43	43
	B	3	0.021	-0.064	1	2	0
	C	7	0.050	-0.124	4	3	0
	D	2	0.014	-0.285	2	0	0
(2) (C) **NP.7.2.7.5.1.3.023**					12-19	20-22	23-27
	A	8	0.057	-0.266	6	2	0
>	B	127	***0.907***	**0.246**	40	45	42
	C	5	0.036	-0.053	3	1	1
	D	0	0.000				
(2) (C) **NP.1.3.1.2.7.2.010**					12-19	20-22	23-27
>	A	127	***0.907***	**0.295**	38	47	42
	B	0	0.000				
	C	1	0.007	-0.074	1	0	0
	D	12	0.086	-0.284	10	1	1

					12-19	20-22	23-27
(6) **NP.5.4.5.1.7.3.030**							
	A	38	0.271	0.038	11	15	12
	B	40	0.286	-0.237	18	18	4
>	C	41	***0.293***	0.319	9	9	23
	D	20	0.143	-0.126	10	6	4
(7) (C) **N.P.3.1.1.4.0.0.028**					12-19	20-22	23-27
	0	121	0.864	-0.298	47	42	32
>	1	19	***0.136***	***0.298***	2	6	11
(D) **NP.5.4.3.2.0.0.020**					12-19	20-22	23-27
>	A	103	0.736	***0.184***	31	37	35
	B	24	0.171	-0.120	11	8	5
	C	13	0.093	-0.124	7	3	3
	D	0	0.000				
(D) **NP.5.4.3.2.0.0.018**					12-19	20-22	23-27
>	A	107	0.764	***0.127***	34	37	36
	B	17	0.121	-0.136	9	5	3
	C	16	0.114	-0.030	6	6	4
	D	0	0.000				
(D) **NP.6.3.0.0.0.0.033**					12-19	20-22	23-27
>	A	100	0.714	***0.116***	31	37	32
	B	40	0.286	-0.116	18	11	11
	C	0	0.000				
	D	0	0.000				
(D) **NCLEP.2.1.0801**					12-19	20-22	23-27
>	A	113	0.807	***0.114***	36	41	36
	B	10	0.071	-0.030	5	1	4
	C	8	0.057	-0.082	3	4	1
	D	9	0.064	-0.074	5	2	2
(E) **N.P.7.2.1.3.1.2.011**					12-19	20-22	23-27
>	A	122	0.871	***0.066***	43	40	39
	B	5	0.036	-0.091	3	2	0
	C	0	0.000				
	D	13	0.093	-0.018	3	6	4
(C) **N.P.7.5.6.2.7.4.015**					12-19	20-22	23-27
	A	37	0.264	-0.130	15	13	9
	B	25	0.179	-0.147	12	7	6
>	C	75	0.536	**0.256**	21	27	27
	D	3	0.021	-0.096	1	1	1

						12-19	20-22	23-27
(C) **N.P. 3.1.3.2.2.1.031**								
		A	11	0.079	-0.087	6	3	2
	>	B	113	0.807	**0.204**	35	39	39
		C	10	0.071	-0.141	5	4	1
		D	6	0.043	-0.103	3	2	1
(C) **N.P.3.2.2.1.4.3.029**						12-19	20-22	23-27
		0	75	0.536	-0.252	32	27	16
	>	1	65	0.464	**0.252**	17	21	27
(C) **NP.4.1.3.2.2.1.025**						12-19	20-22	23-27
	>	A	53	0.379	**0.282**	12	16	25
		B	10	0.071	-0.251	9	1	0
		C	36	0.257	-0.052	14	11	11
		D	41	0.293	-0.108	14	20	7
(C) **NP.1.1.0.0.0.0.027**						12-19	20-22	23-27
		0	39	0.279	-0.256	23	10	6
	>	1	101	0.721	**0.256**	26	38	37
(C) **NCLEP.2.1.19101**						12-19	20-22	23-27
		0	22	0.157	-0.285	14	5	3
	>	1	118	0.843	**0.285**	35	43	40
(C) **NCLEP.2.1.19102**						12-19	20-22	23-27
		0	17	0.121	-0.208	10	4	3
	>	1	123	0.879	**0.208**	39	44	40
(C) **NP.5.4.3.2.0.0.019**						12-19	20-22	23-27
		A	55	0.393	-0.071	22	17	16
		B	22	0.157	-0.246	12	7	3
	>	C	63	0.450	**0.250**	15	24	24
		D	0	0.000				
NP.7.2.7.5.1.3.022						12-19	20-22	23-27
	>	A	105	0.750	0.323	31	34	40
		B	29	0.207	-0.305	15	12	2
		C	4	0.029	-0.007	1	2	1
		D	2	0.014	-0.125	2	0	0
NP.7.2.7.5.1.3.021						12-19	20-22	23-27
	>	A	94	0.671	0.312	24	32	38
		B	46	0.329	-0.312	25	16	5
		C	0	0.000				
		D	0	0.000				

NCLEP.1.1.0802					12-19	20-22	23-27
>	A	76	0.543	0.382	20	22	34
	B	32	0.229	-0.209	15	13	4
	C	24	0.171	-0.227	13	6	5
	D	7	0.050	-0.070	1	6	0
N.P.5.2.6.3.3.1.016					12-19	20-22	23-27
	A	2	0.014	-0.045	1	1	0
>	B	64	0.457	0.436	10	20	34
	C	47	0.336	-0.359	26	17	4
	D	27	0.193	-0.108	12	10	5
N.P. 6.3.7.3.6.2.014					12-19	20-22	23-27
	A	13	0.093	-0.205	9	3	1
	B	17	0.121	-0.281	10	5	2
	C	7	0.050	-0.059	2	4	1
>	D	103	0.736	0.372	28	36	39
NP.7.2.7.5.1.3.024					12-19	20-22	23-27
	A	32	0.229	-0.130	13	12	7
	B	35	0.250	-0.295	19	11	5
>	C	73	0.521	0.366	17	25	31
	D	0	0.000				
N.P.1.1.4.1.0.0.004					12-19	20-22	23-27
	0	66	0.471	-0.335	33	21	12
>	1	74	0.529	0.335	16	27	31
NCLEP.4.2.0803					12-19	20-22	23-27
>	A	67	0.479	0.303	15	24	28
	B	22	0.157	-0.233	12	7	3
	C	29	0.207	-0.112	13	9	7
	D	21	0.150	-0.041	8	8	5

ABO-NCLE BASIC EXAM CANDIDATE HANDBOOK

HOW ARE EXAMS DEVELOPED?

The ABO-NCLE certification examinations are developed consistent with the technical guidelines recommended by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education (AERA, APA, NCME; 1999). Each examination is developed by ABO-NCLE in cooperation with a Content Expert Panel (CEP) composed of carefully selected Subject Matter Experts (SME) in the field. CEPs analyze the professional skills and abilities from job task analyses, which provide the evidence for the test content outline (also called the test blueprint). Test questions or "items" are written by Certified Opticians and Certified Contact Lens Fitters/Technicians in their discipline who have received training by ABO & NCLE staff and **Prometric** in writing items. The items are then reviewed by the CEP with **Prometric** and pilot-tested to ensure validity and psychometric quality before being used as scored items on the actual examinations. ABO- NCLE adheres to a variety of guidelines during the development of items to ensure that the items are appropriate for the Certification exam(s). This includes editing and coding items, referencing items to the approved test content outlines and reference books, and screening items for bias and stereotypes. Items for the Certification Examinations are selected that reflect the test content outline and item distributions. The validity and reliability of the exams are monitored by ABO-NCLE staff. Certification examinations are updated approximately every three years.

ABO-NCLE PRACTICAL HANDBOOK

HOW ARE EXAMS DEVELOPED?

All ABO-NCLE Certification Examinations, including the ABOP and NCLEP, are developed consistent with the technical guidelines recommended by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education (AERA, APA, NCME; 1999). Each examination is developed by ABO-NCLE in cooperation with a Content Expert Panel (CEP) composed of carefully selected Subject Matter Experts (SME) in the field. CEPs analyze the professional skills and abilities from job task analyses, which provide the evidence for the test content outline (also called the test blueprint). Test questions or "items" are written by Certified Opticians and Certified Contact Lens Fitters/Technicians in their discipline who have received training by ABO & NCLE staff and **Prometric** in writing items. The items are then reviewed by the CEP to ensure validity and psychometric quality before being used as scored items on the actual examinations. ABO-NCLE adheres to a variety of guidelines during the development of items to ensure that the items are appropriate for the Practical Exam Certification exams. This includes editing and coding items, referencing items to the approved test content outlines and reference books, and screening items for bias and stereotypes. Items for the Practical Certification Examinations are selected that reflect the test content outline and item distributions. The validity and reliability of the exams are monitored by ABO-NCLE staff. Certification examinations are updated approximately every two to three years.

QUESTIONS

- According to the Handbooks, item writers receive training by ABO-NCLE staff and Prometric. Is Prometric involved in providing training for the practical exams? If so, what Prometric employees are involved?
- For the ABO-NCLE Basic Exams, the items are reviewed by the CEP with Prometric and pilot-tested. For the ABO-NCLE Practical Exams, the items are reviewed by the CEP and no mention is made of Prometric. What testing agency is responsible for reviewing and pilot-testing ABOP and NCLEP items?

ABO-NCLE BASIC EXAM CANDIDATE HANDBOOK

THE EXAMINATIONS

The two-hour multiple-choice examinations are written by groups of Certified Opticians and Certified Contact Lens Fitters/Technicians with assistance from the testing service, **Prometric.** The purposes of the NOCE and CLRE are to evaluate the knowledge and skills associated with the performance of tasks required for the professional practice of Opticianry and/or Contact Lens Technology.

ABO-NCLE PRACTICAL HANDBOOK

THE EXAMINATIONS

The sixty-minute examinations are designed and developed by groups of Certified Opticians and Contact Lens Fitters/Technicians with assistance from an **independent testing service.** The purpose of the ABOP Exam and NCLEP Exam are to apply the knowledge previously demonstrated by the candidates to skills and abilities associated with the performance of tasks required for the professional practice of Opticianry and/or Contact Lens Technology.

QUESTIONS

- What "independent testing service" is assisting with the practical exams?
- Is the "independent testing service" under contract with the ABO-NCLE? If so, when was the board notified of this relationship? If not, why not?
- If a contact exists with the "independent testing service," the board should review the conditions of service.
- What are the professional qualifications of the testing service?
- If the practical exams are challenged, is the testing service responsible for defending the contents?
- If successfully challenged, is the testing service responsible for damages or the ABO-NCLE?
- What is the liability for ABO-NCLE individual board members if the practical exams are successfully challenged?

ABO-NCLE BASIC EXAM CANDIDATE HANDBOOK

EXAMINATION RESULTS

Exam results are reported instantly as soon as the candidate has completed their exam. Candidates also receive an email within a couple of hours, after they have completed their exam, with their exam report. On occasion, ABO-NCLE is required to undergo "health checks" for the exams. Candidates will receive a preliminary indication of their exam results after submission. Official results will be released after appropriate analysis and review is completed by the exam company. State licensing boards will receive rosters of Candidates from their state that have passed and not passed the exams. If candidates want their results sent to another state's licensing board, they need to contact ABO-NCLE to make this request.

ABO-NCLE PRACTICAL HANDBOOK

EXAMINATION RESULTS

Exam results are reported instantly as soon as the candidate has completed their exam. Candidates also receive an email within a couple of hours, after they have completed their exam, with their exam report. On occasion, ABO-NCLE is required to undergo "health checks" for the exams. Candidates will receive a preliminary indication of their exam results after submission. Official results will be released after appropriate analysis and review is completed by the exam company. State licensing boards will receive rosters of Candidates from their state that have passed and not passed the on-line practical exam in their state. If candidates want their results sent to another state's licensing board, they need to contact ABO-NCLE to make this request. A certificate suitable for framing will be emailed to those candidates who pass the exam using the name given when they registered.

QUESTIONS

- What testing service is responsible for the ABO-NCLE Basic Exam "health checks?"
- What testing service is responsible for the ABO-NCLE Practical Exam "health checks?"
- What exam company is responsible for releasing ABO-NCLE Basic Exam official results "after appropriate analysis and review?"
- What exam company is responsible for releasing ABO-NCLE Practical Exam official results "after appropriate analysis and review?"

ABO PRACTICAL

Review of:
Pupilometer Measurements
Segment Height Measurements
Determination of Progressive Add Power

QUESTION 1. What definitive studies by manufacturers, academic institutions, or industry sources concerning the accuracy of handheld pupilometers have been conducted? *(REFERENCES, pgs 8-10)*

A literature search located two (2) dedicated pupilometer studies and one (1) study that included handheld pupilometers:

The Department of Ophthalmology and Visual Sciences, University of Illinois College of Medicine, used a pupilometer to analyze the PD of fifty-two healthy and naïve participants by a trained examiner. **Measurements of repeatability using the 95% LoA for the examiner are -0.79 to +0.73 mm for the pupilometer.**

A Study of the Accuracy of Corneal Reflection Pupilometers, Applied Vision Research Centre, University of Waterloo: We studied the accuracy of nine corneal reflection pupilometers made by three manufacturers, because, at the time of investigation, we could not find any information about their accuracy. For this purpose, two steel balls separated by spacer bars, were positioned to simulate nominal interpupillary distance (PD) measurements … **The average error in mean value of the measurements for all PD's was 2.3 mm …** Significant sources of error were poor eye relief in all instruments evaluated, as well as friction in the scale adjustment mechanism in some instruments.

In 2009 Dr. Wolfgang Wesemann investigated the levels of measurement accuracy and handling characteristics of four video centration devices and four pupilometers. The finding include: …As to Rodenstock's and Topcon's pupilometer, they provided values that were approximately 0.8 mm smaller than the mean PD value.

In this regard, it has to be noted that systematic differences of around 1.3 mm can be found in the PD measurement result, even when utmost care is taken when operating the eight centration systems. These differences are not caused by measurement uncertainties or setting errors made by the examiner but are due exclusively to system-specific setting modes and measuring principles.

The standard deviation of 0.68 for the OD and 0.76 for the OS from a Tennessee study supports the University of Illinois College of Medicine, measurements of repeatability of -0.79 to +0.73 mm for the pupilometer.

No definitive studies have been located indicating handheld pupilometers by any manufacturer can produce consistent interpupillary measurements to a tolerance of ±0.5 mm. The tolerances for this portion of the ABOP are not supported by any standard text used for teaching Opticianry students, industry best practice, state Opticianry licensing board, ANSI standards, published articles, or subject matter expert. Requiring ABOP candidates to measure PD's within ±0.5 mm is not a *real-life scenario that would be encountered by a practicing Optician and/or Contact Lens Technician/Fitter on the first day of employment in his or her practice without supervision.* *

Topics for Review: *Content Expert Panel, Subject Matter Experts, Independent Testing Service, Citations, Professional Standards and Tolerances*

*ABO-NCLE Practical Exam Candidate Handbook, THE EXAMINATIONS – Page 6

QUESTION 2. What are the ophthalmic industry tolerances relating to interpupillary measurements obtained using a handheld pupilometer? *(REFERENCES, pg 11)*

While most digital reflection pupilometers provide readings in 0.5 mm increments, consistent measurements in this accuracy range are almost impossible to consistently achieve. This is due, in part, to the rounding errors (±0.251 mm) inherent to this device that are compounded by friction and the malleable nose surface on which it rests. The American Board of Opticianry Practical (ABOP) requires candidates to demonstrate a standard reflecting the maximum accuracy of the pupilometer; a level that is unattainable in actual, or simulated, practice.

No industry tolerances relating to interpupillary measurements obtained using a handheld pupilometer can be located after an extensive literature search of manufacturers, academic institutions, and industry publications. The test tolerances appear to be arbitrary and not supported by any standard text used for teaching Opticianry students, industry best practice, state Opticianry licensing board, ANSI standards, published articles, or subject matter expert. Requiring ABOP candidates to measure PD's within ±0.5 mm is not a *real-life scenario that would be encountered by a practicing Optician and/or Contact Lens Technician/Fitter on the first day of employment in his or her practice without supervision.* *

Topics for Review: *Content Expert Panel, Subject Matter Experts, Independent Testing Service, Citations, Professional Standards and Tolerances*

*ABO-NCLE Practical Exam Candidate Handbook, THE EXAMINATIONS – Page 6

QUESTION 3. What objective measurement is used to determine segment heights for progressive, trifocal, and bifocal lenses?
(REFERENCES, pgs 12-22)

Progressive Lenses: According to most sources, placing the fitting cross of a progressive lens at center pupil adheres to accepted best practices and standardized methods of performing that task. In *System*, Dr. Brooks suggests placing the fitting cross of the progressive lens at center pupil. This measurement technique is confirmed by numerous subject matter experts listed in the REFERENCE section.

Trifocal Lenses: Depending on the source, the standard fitting for a trifocal lens is to place the top of the intermediate somewhere from the lower edge of the pupil to the middle of the iris. In *System*, Dr. Brooks suggests subtracting 1 mm from the lower pupil edge measurement. Three subject matter experts agreed with this technique, the remainder preferred using the lower pupil edge with no further adjustment. There is no single accepted best practice or standardized method of performing this task.

Bifocal Lenses: Depending on the source, the standard fitting for a bifocal lens is to place the top of the bifocal somewhere from the lower edge of the limbus to the lower lash line. In *System*, Dr. Brooks suggests three methods, the lower limbus method, the lower lid method, and the subjective method which he considers to be the most accurate. It is difficult to measure in the absolute using the lower lid since each eyelid margin is about 2 mm thick. No consensus method was provided by the subject matter experts. There is no single accepted best practice or standardized method of performing this task.

After reviewing reference texts, standard texts used for teaching Opticianry students, ANSI standards, published articles, and contacting numerous subject matter experts, no universal objective measurement standard used to determine segment heights for trifocal and bifocal lenses can be located. There is general agreement that center pupil is used when determining progressive lens height for adults.

There are no objective industry standards relating to segment height measurements. Requiring ABOP candidates to perform a subjective measurement with objective standards is not a *real-life scenario that would be encountered by a practicing Optician and/or Contact Lens Technician/Fitter on the first day of employment in his or her practice without supervision.* *

Topics for Review: *Content Expert Panel, Subject Matter Experts, Independent Testing Service, Citations, Professional Standards and Tolerances*

*ABO-NCLE Practical Exam Candidate Handbook, THE EXAMINATIONS – Page 6

QUESTION 4. Are there universally recognized tolerances for measurements obtained by an Optician when determining segment heights for progressive, trifocal, or bifocal lenses? *(REFERENCES, pgs 23-26)*

The ABOP has established a tolerance range of ±0.5 mm for measurement of progressive, trifocal and bifocal heights; however, there are no published industry tolerances for segment height measurements taken by an Optician.

According to ANSI Z80.1, the vertical seg height must be within ±1.0 mm of specification in any direction for mounted or unassembled lenses and no more than 1.0 mm difference in the mounted pair. ANSI Z80.1 standards *apply to prescription lenses in edged or unassembled form* ***not*** the fitting height measurement taken by an Optician.

No subject matter experts listed in the REFERENCE section, or literature search of technical publications, claimed universally recognized tolerances for measurements obtained by an Optician when determining segment heights for progressive, trifocal, or bifocal lenses.

The ABOP test tolerances appear to be arbitrary and not supported by any standard text used for teaching Opticianry students, industry best practice, state Opticianry licensing board, ANSI standards, published articles, or subject matter expert. Requiring ABOP candidates to provide segment height measurements within a tolerance range of ±0.5 mm is not a *real-life scenario that would be encountered by a practicing Optician and/or Contact Lens Technician/Fitter on the first day of employment in his or her practice without supervision.* *

Topics for Review*: Content Expert Panel, Subject Matter Experts, Independent Testing Service, Citations, Professional Standards and Tolerances*

*ABO-NCLE Practical Exam Candidate Handbook, THE EXAMINATIONS – Page 6

QUESTION 5. When determining the add power for progressive lenses, what is the industry best practice and standardized method (front vertex, back vertex, temporal engraving)? *(REFERENCES, pgs 27-29)*

The ABOP requires test candidates to use a simulated focimeter to determine the add power for a simulated progressive lens that has the temporal engraving removed.

According to instructions published by Essilor, Zeiss and other progressive lens manufacturers, the "ADD Engraving – appears under the temporal circle and denotes the ADD power. Verification of ADD power should be made with the engraving, not with the near verification circle." The clear consensus of the subject matter experts listed in the REFERENCE section is to use the temporal engraving when determining add power for progressive lenses. Technical experts from Carl Zeiss Vision, Vision-Ease Lens, and Essilor of America state that the industry best practice is to use the temporal engraving when determining add power for progressive lenses.

In *System for Ophthalmic Dispensing*, Dr. Brooks states:

In practice the power of the near addition is seldom measured for progressive lenses. This is because the near addition power appears as a hidden number on the front surface of the lens. Instead of using the lensmeter for near power, verifying this hidden number is common practice.

The Optical Lab Division Liaison of The Vision Council offers the following explanation as to why determining the add power using the temporal engraving is considered to be the accepted best practice and standardized method of performing this task:

Manufacturers did this because most lensmeters are not designed for "off axis" viewing. This is especially true for manual lensmeters. It was also done as it is not easy to find the exact location of the Near Reference Point (NPR). Most NRP's are not at a fixed location for the lens designs and vary according to add power and base curve. Although the ink mark on the lens from the manufacturer is fixed. For example, a 5 base 1.50 add lens might have a NRP of 14 mm down and 2.25 mm in and the same lens with a 2.50 add might be a 13.7 mm down and 2.6 mm in. The ink marking would not vary to accommodate this.

The temporal engraving has been removed from the progressive lens used in the ABOP simulated examination preventing candidates from determining the progressive add power in accordance with the industry best practice and standardized method. By eliminating the temporal engraving, the ABOP is not presenting *real-life scenarios that would be encountered by a practicing Optician and/or Contact Lens Technician/Fitter on the first day of employment in his or her practice without supervision.* *

Topics for Review: *Content Expert Panel, Subject Matter Experts, Independent Testing Service, Citations, Professional Standards and Tolerances*

*ABO-NCLE Practical Exam Candidate Handbook, THE EXAMINATIONS – Page 6

DISCUSSION

ABO-NCLE Practical Exam Candidate Handbook

HOW ARE EXAMS DEVELOPED? – Pages 2-3

All ABO-NCLE Certification Examinations, including the ABOP and NCLEP, are developed consistent with the technical guidelines recommended by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education (AERA, APA, NCME; 1999). **Each examination is developed by ABO-NCLE in cooperation with a Content Expert Panel (CEP) composed of carefully selected Subject Matter Experts (SME) in the field.** CEPs analyze the professional skills and abilities form job task analyses, which provide the evidence for the test content outline (also called the test blueprint). Test questions or "items" are written by Certified Opticians and Certified Contact Lens Fitters/Technicians in their discipline who have received training by ABO & NCLE staff and Prometric in writing items. The items are then reviewed by the CEP to ensure validity and psychometric quality before being used as scored items on the actual examinations. ABO-NCLE adheres to a variety of guidelines during the development of items to ensure that the items are appropriate for the Practical Exam Certification exams. This includes editing and coding items, referencing items to the approved test content outlines and **reference books**, and screening items for bias and stereotypes. Items for the Practical Certification Examinations are selected that reflect the test content outline and item distributions. The validity and reliability of the exams are monitored by the ABO-NCLE staff. Certification examinations are updated approximately every two to three years.

1. What is the composition and qualifications of the Content Expert Panel?
2. What is the composition and qualifications of the Subject Matter Experts?
3. What citations are listed for Pupilometer Measurements, Segment Height Measurements, and Determination of Progressive Add Power?

THE EXAMINATIONS – Pages 5-6

The sixty-minute examinations are designed and developed by groups of Certified Opticians and Contact Lens Fitter/Technicians with assistance from an *independent testing service.* The purpose of the ABOP Exam and NCLEP Exam are to apply the knowledge previously demonstrated by the candidates to skills and abilities associated with the performance of tasks required for the professional practice of Opticianry and/or Contact Lens Technology.

The examinations are developed for Opticians and Contact Technicians from all practice settings in the United States. They are based on hands-on knowledge from many different optician situations. There is nothing tricky about the examinations. Questions are created to test the ability of a candidate to apply knowledge previously demonstrated through successful completion of the NOCE and CLRE basic examinations to ***real-life scenarios*** **that would be encountered by a practicing Optician and/or Contact Lens Technician/Fitter on the first day of employment in his or her practice without supervision.**

1. What is the composition and qualifications of the "groups"?
2. What is the name of the independent testing service, what are its qualifications, what services does it provide, and when did ABO-NCLE contract for this service?

REFERENCES

QUESTION 1. What definitive studies by manufacturers, academic institutions, or industry sources concerning the accuracy of handheld pupilometers have been conducted?

Subject Matter Expert Responses:

Banks, Daniel, Opticianry Program Director, Camden County College, NJ:
None.

Cheevers, Kari, Opticianry Program Director, American Career College, CA:
No.

Dennis, Ray, Opticianry Program Director, Middlesex Community College, CT:
Essilor.

Goggin, Mike, Opticianry Program Director, Roane State Community College, TN:
None.

Hanlin, Pete, LDO, Director - Technical Marketing, Essilor of America:
The only study I know of was conducted in Germany and involved a comparison of 8 devices (4 handheld and 4 automated). There was quite a bit of data generated regarding accuracy and repeatability. The study was presented in two parts- but I have attached them as a single WORD document (wesemann). If the study had a sponsor, it is not indicated- so it may be truly independent research.

King, Michael, Opticianry Program Director, Community College of Rhode Island:
No. I also know of no tolerances pertaining to the device itself (e.g., I personally tell practitioners a pupilometer should be calibrated if it is off by 1 mm or more, but I have seen pupilometers in the field that have been off by as much as 2.5 mm in one eye- and I know of no standard that could be used to deem that pupilometer "out of tolerance").

Kotob, Deborah, ECP Education Facilitator, Vision-Ease Lens:
I do not have this data.

Lloyd, Scott, Opticianry Program Director, Ogeechee Technical College, GA:
No

Martellaro, Robert, President Roberts Optical Ltd.:
From memory, and in my opinion, the best results are when manual methods are used, specifically by marking the lens (I prefer thin lines instead of dots) on a preadjusted frame, observing/occluding the corneal reflex. Parallax errors must be eliminated.

Prescott, Dennis, Opticianry Program Director, Highline College, WA:
None.

Vitale, Michael C., Optical Lab Division of The Vision Council:
I am not aware of any studies that have been done or of any issues related to the accuracy of handheld pupilometers.

Whitney, Dick, Manager, Industry Standards, Carl Zeiss Vision, Inc.:
The only study that I am aware of that touches upon PD measurement dates back to 1972 when the Chase Lynch study was published. Again, this is not really about errors in specifying the Rx, it is more about lens fabrication.

OTHER SOURCES

The Department of Ophthalmology and Visual Sciences, University of Illinois College of Medicine, 1855 West Taylor Street, Chicago, IL 60612, USA. timomcma@uic.edu conducted a study entitled: Accuracy and repeatability of self-measurement of interpupillary distance. Authors: McMahon TT, Irving EL, Lee C.

PURPOSE: To determine the accuracy and repeatability of participants determining their own interpupillary distance (PD).

METHODS:
Fifty-two healthy and naïve participants were enrolled and analyzed. All participants analyzed were without strabismus. Participants had PD measurements taken by a trained examiner using both a PD rule and an optical pupillometer.

RESULTS:
The mean difference between the examiner PD rule measurement and the pupillometer were +0.59 mm [95% limits of agreement (LoA) -0.69 to +1.88], pupillometer-self +0.46 mm (-5.22 to +6.14), pupillometer-friend +2.00 mm (-3.80 to +7.81), and pupillometer-App -3.24 mm (-3.09 to +9.57). Measurements of repeatability using the 95% LoA for the examiner are -0.79 to 0.73 mm for the pupillometer and -1.04 to +1.20 mm for the PD rule. Participants' repeatability for the self-measurement (mirror) was -3.61 to +4.75 mm, employing a friend was -3.74 to +3.94 mm, and using the IPod application was -6.63 to +6.51 mm.

A study of the accuracy of corneal reflection pupillometers was published in Ophthalmic and Physiological Optics, Volume 18, Issue 6, pages 527–531, November 1998.

SUMMARY
We studied the accuracy of nine corneal reflection pupillometers made by three manufacturers, because, at the time of investigation, we could not find any information about their accuracy. For this purpose, two steel balls separated by spacer bars, were positioned to simulate nominal inter-pupillary distance (PD) measurements of 55, 60, 65 and 70 mm. Ten measurements of each 'PD' for distance vision, were made by two experienced observers, with each instrument. We found that interobserver differences in measurement were clinically insignificant most of the time, although some data sets were significantly different statistically. The most consistent and accurate measurements of PD were achieved with PD 65 mm. The average error in mean value of the measurements for all PD's, was 2.3 mm, and the average of the standard deviation in our measurements was 0.26 mm. Significant sources of error were poor eye relief in all instruments evaluated, as well as friction in the scale adjustment mechanism in some instruments. Our findings show that while a given pupillometer may be relied upon to give consistent readings (within the limits of clinically acceptable error), its accuracy should be checked periodically, especially for very small and very large PD measurements.

In 2009, Dr. Wolfgang Wesemann, Höhere Fachschule für Augenoptik Cologne, performed a study entitled Comparison of State-of-the-Art PD Measuring Devices. Levels of measurement accuracy and handling characteristics of four video centration devices and four pupilometers were investigated in a comparative study.

...As to Rodenstock's and Topcon's pupilometer, they provided values that were approximately 0.8 mm smaller than the mean PD value.

In this regard, it has to be noted that systematic differences of around 1.3 mm can be found in the PD measurement result, even when utmost care is taken when operating the eight centration systems. These differences are not caused by measurement uncertainties or setting errors made by the examiner, but are due exclusively to system-specific setting modes and measuring principles.

In October 2014, 25 licensed Tennessee Opticians were provided an Essilor Pupilometer and instructed to "measure the distance PD" on a trained subject. Three (3) distance PD measurements were performed by each Optician.

Experience: 5-10 years 28%, 10-15 years 20%, 20+ years 52%

PD Measurement Essilor Pupilometer

Binocular PD	Mean 68.0	SD 1.25	Median 68.0	Mode 68.0
Monocular PD OD	Mean 34.5	SD 0.68	Median 34.5	Mode 34.0
Monocular PD OS	Mean 33.6	SD 0.76	Median 33.5	Mode 33.5

QUESTION 2. What are the ophthalmic industry tolerances relating to interpupillary measurements obtained using a handheld pupilometer?

Subject Matter Expert Responses:

Cheevers, Kari, Opticianry Program Director, American Career College, CA:
None.

Dennis, Ray, Opticianry Program Director, Middlesex Community College, CT:
No industry tolerances.

Goggin, Mike, Opticianry Program Director, Roane State Community College, TN:
None.

Hanlin, Pete, LDO, Director - Technical Marketing, Essilor of America:
I am not aware of any tolerances related to the accuracy of the actual measurements as taken by the practitioner. All standards of which I'm aware relate to the conformance of the finished product to the practitioner's order.

As I think about it, I do not believe there are any tolerances associated with most medical measurements (I don't believe there is a tolerance for how close a practitioner should get when manually measuring blood pressure- but I'm sure there are standards for the sphygmomanometer itself...

King, Michael, Opticianry Program Director, Community College of Rhode Island:
No

Kotob, Deborah, ECP Education Facilitator, Vision-Ease Lens:
I have nothing to contribute.

Lloyd, Scott, Opticianry Program Director, Ogeechee Technical College, GA:
No. However, the pupilometer should be calibrated to within .5 mm.

Martellaro, Robert, President Roberts Optical Ltd.:
No

Prescott, Dennis, Opticianry Program Director, Highline College, WA:
No, and the proper maintenance of the tool is important.

Vitale, Michael C., Optical Lab Division of The Vision Council:
I am not aware of any industry tolerances for measuring PDs with a reflection pupilometer nor am I aware of any manufacture of digital or manual pupilometers that state the accuracy of their devices.

Whitney, Dick, Manager, Industry Standards, Carl Zeiss Vision, Inc.:
No, I am not aware of any tolerances and a difficult one to accurately specify given inherent variations in the methods.

QUESTION 3. What objective measurement is used to determine segment heights for progressive, trifocal, and bifocal lenses?

MEASUREMENT OF SEGMENT HEIGHT – PROGRESSIVE LENSES

Subject Matter Expert Responses:

Banks, Daniel, Opticianry Program Director, Camden County College, NJ:
Center of pupil.

Cheevers, Karl, Opticianry Program Director, American Career College, CA:
Center pupil.

Dennis, Ray, Opticianry Program Director, Middlesex Community College, CT
Center pupil.

Goggin, Mike, Opticianry Program Director, Roane State Community College, TN:
Center of pupil.

Hanlin, Pete, LDO, Director - Technical Marketing, Essilor of America:
I would concur with center pupil measured vertically from the deepest point of the frame.

King, Michael, Opticianry Program Director, Community College of Rhode Island:
Corneal reflection with a penlight.

Kotob, Deborah, ECP Education Facilitator, Vision-Ease Lens:
I am only aware of center pupil: which is what we recommend.

Lloyd, Scott, Opticianry Program Director, Ogeechee Technical College, GA:
Pupil center.

Martellaro, Robert, President Roberts Optical Ltd.:
I bisect the corneal reflex.

Prescott, Dennis, Opticianry Program Director, Highline College, WA:
Center pupil, but proper head positions and frame adjustment are necessary.

Vitale, Michael C., Optical Lab Division of The Vision Council:
Most progressive lens manufactures will state that you should "dot center pupil".

Whitney, Dick, Manager, Industry Standards, Carl Zeiss Vision, Inc.:
My experience is with the center of the pupil.

OTHER SOURCES

Brooks, Clifford W., and Irvin M. Borish. *System for ophthalmic dispensing*. 3rd ed. St. Louis, Mo.: Butterworth Heinemann, 2007.

Measuring For and Ordering the Progressive pg. 455

To help make sure the progressive corridor is where it should be, the manufacturer uses a *fitting cross*. The fitting cross is usually 4 mm above the start of the progressive corridor and is intended to be placed exactly in front of the wearer's pupil center.

OptiCampus.com, Darryl Meister *Progressive Lens Dispensing, Module 10*

Measure the Fitting Heights
Ensure that you are eye level with the wearer.
Take monocular fitting height measurements.
Dot the demo lens, if available.
Measure directly to pupil center.

***Essilor Fitting and Dispensing Guide* TAKE FITTING HEIGHT MEASUREMENT**

Avoid parallax error.
Take monocular height measurement by marking each lens at pupil center using a felt-tip pen.
Draw a horizontal line on each lens and double check to make sure that the lines are crossing the center of each pupil.
Measure the fitting height from the deepest point of the lens to the pupil center.

20/20 Magazine *The Personal Touch Tips for Fitting Personalized Lenses,* Mark Mattison-Shupnick, ABOM

Fit personalized progressive lenses at the pupil center. This is true for all personalized lenses (at least so far). Since the lens designer assumes that the lens will be fit at pupil center, all of its design attributes radiate from here.

***Carl Zeiss Vision* FITTING HEIGHT**

With the patient looking straight ahead into the distance, dot each lens at the center of the pupil. Measure fitting heights with a PD ruler.

***Younger Optics* Trilogy Lenses**

Fitting height of center of pupil measured from deepest point of the frame.

MEASUREMENT OF SEGMENT HEIGHT – TRIFOCALS

Subject Matter Expert Responses:

Banks, Daniel, Opticianry Program Director, Camden County College, NJ:
1 mm lower than the lower edge of pupil.

Cheevers, Kari, Opticianry Program Director, American Career College, CA:
Bottom of pupil.

Dennis, Ray, Opticianry Program Director, Middlesex Community College, CT:
The lower edge of the pupil in normal lighting.

Goggin, Mike, Opticianry Program Director, Roane State Community College, TN:
I use bottom of pupil for trifocals as a "rule of thumb."

Hanlin, Pete, LDO, Director - Technical Marketing, Essilor of America:
It seems to me the standard accepted position for the superior edge of the intermediate ribbon in a FT 7x28 has always been the lower edge of the pupil. In fact, checking my copy of Brooks & Borish System for Ophthalmic Dispensing (the Bible of dispensing, IMO) I find that is the recommended objective position (followed immediately by a description of how to subjectively measure trifocal height).

However, in real life I would admit to rarely fitting a trifocal that high. More often, I subtracted 1.0-1.5 mm from a measured height to the bottom of the pupil. Still, the bottom of the pupil has always been my "point of reference."

King, Michael, Opticianry Program Director, Community College of Rhode Island:
Split the iris with the first marking – then raise or lower according to the patient's needs.

Kotob, Deborah, ECP Education Facilitator, Vision-Ease Lens:
Lower edge of pupil and subtract 1 mm.

Lloyd, Scott, Opticianry Program Director, Ogeechee Technical College, GA:
Lower pupil (-1 mm)

Martellaro, Robert, President Roberts Optical Ltd.:
Assuming a vertex distance of 13 mm, under typical office lighting, typical posture with the eyes pointing straight ahead, I position the segment line 2 mm below the bottom of the pupil. Some folks must have it higher or lower due to success with the habitual position or task specificity, but never lower than the lower limbus, nor higher than the bottom of the pupil, during the primary gaze. I suggest 19 mm of usable segment height as the minimum height for a 7x28.

Prescott, Dennis, Opticianry Program Director, Highline College, WA:
I have always used the bottom of the pupil, but frame adjustment and preferences of the customer are essential to take into consideration.

Vitale, Michael C., Optical Lab Division of The Vision Council:
Lower pupil is the recommended fitting location.

Whitney, Dick, Manager, Industry Standards, Carl Zeiss Vision, Inc.:
I will have to look back on Bif / Trifocal, but lower lid is what I recall.

OTHER SOURCES

Brooks, Clifford W., and Irvin M. Borish.*System for ophthalmic dispensing.* 3rd ed. St. Louis, Mo.: Butterworth Heinemann, 2007.
Measuring For Trifocals, pg 72
The techniques for measuring trifocals are identical to those for measuring bifocals, except the reference is the top of the trifocal intermediate segment rather than the top of the lower near segment.

Lower Edge of Pupil Method, pg 73
The lower edge of the pupil method is similar to the lower limbus and lower lid margin methods used for bifocals. For trifocals, however, the lower pupil is aligned with the zero mark of the vertically held PD rule. ... The 1 mm is subtracted to compensate for pupil clearance during fixation of the eye in distance viewing.

Subjective Determination, pg 73
The subjective techniques is again to that used for bifocals, with the addition of a test for the third section of the lenses. When an overhead transparency pen and glazed lens are used, the two trifocal lines may be drawn on the lens. The area in between is "colored in" with the pen.

Benjamin, William J. OD, *Borish's clinical refraction* – Second Edition; Butterworth-Heinemann; St. Louis, MO, Copyright 2006. P110.
The standard fitting is to place the top of the intermediate at the lower edge of the pupil, assuming an average pupil diameter of about 4 mm. Under conditions of normal room illumination, therefore, the trifocal segment should be placed 2 mm below the center of the pupil. Another standard fitting technique is to place the top of the intermediate segment halfway between the center of the pupil and the inferior limbus or lower eyelid margin. Because the average vertical dimension of the cornea is 12 mm, the top intermediate seg line would be placed approximately 3 mm below the center of the pupil using this criterion.

***20/20 Opticians Handbook* Jobson**
For bifocals, fit to the top of the lower lid, for trifocals to the lower edge of the pupil. This a starting point, consider the segment height of the previous glasses, height of the patient and patient satisfaction with their previous lenses.
5. If the patient is tall and uses their eyewear while standing, then 1-2 mm lower might be better.

Tunnacliffe, Alan H. *Introduction to visual optics.* London: Association of British Dispensing Opticians, 1993.
Trifocals are normally fitted so that the lower limbus of the cornea is at the centre of the intermediate portion, with the eyes in the primary position.

Carl Zeiss Vision Optical Training Guide
How to Measure & Dispense Multifocals
Measure from the top of the trifocal to the deepest portion of the frame. If this is the patient's first trifocal, mark and measure 2-3 mm higher than their previous bifocal.

Bifocals & Trifocals: *Solutions for "Short Arms" By* Gary Heiting, OD
Trifocals are fitted a bit higher, with the top line of the intermediate seg placed even with the lower margin of the pupil.

Eye Care Professional Magazine *In pursuit of precision* by Alvaro
A trifocal height is usually measured at the lower pupillary margin or in the middle of the lower iris.

Wooton, D. M. (2003). Optical training skills and procedures. St. Louis, Mo.:
Lined Trifocal Measurements
The following measurements are needed for the 7 x 28. 8 x 35, and so on: Remember to measure the seg height from the middle of the iris to the farthest bottom inside point of the frame.

Carlton, J. (2000). *Frames and lenses.* Thorofare, NJ: SLACK.
…Most often, trifocal segments are placed somewhere between the bottom edge of the pupil and the bottom lid….

Pallikaris, I. G. (2012). *Presbyopia: origins, effects, and treatment.* Thorofare, NJ: SLACK.
…For trifocal wearers, a good rule of thumb is to position the top of the segment at the lower pupil margin or, if the pupil is small, midway between the pupil and the limbus.

***Ophthalmic medical assisting: an independent study course: examination.* (1991). San Francisco, CA: American Academy of Ophthalmology.**
Chapter 8 Fundamentals of Practical Opticianry, Segment Heights Pgs 149 – 150
…In determining segment heights, remember that each patient has different vision requirements and must be treated individually with respect to these special requirements. … Trifocals are usually fit about 7 mm higher than the lower lid margin.

Dowaliby, Margaret. *Practical aspects of opthalmic optics.* New York: Professional, 1988.
Chapter 4, Trifocal Designs, Pg 64 – INTRODUCTION
In the fitting of trifocal lenses, it is usually best to position the upper line of the intermediate segment 1 mm below the pupil in normal daylight illumination. Most of the problems encountered in trifocal fitting stem from positioning the intermediate segment too high, resulting in a dividing line that is difficult to ignore when using the lenses for distance viewing.

Naval Ophthalmic Support and Training Activity Opticians School Reference Manual
Trifocals
The placement of the intermediate segment is determined by several factors including the working field desired, the height and facial and other physical characteristics of the patient, and particularly the angle at which the head is normally carried. Three systems of deciding on and determining segment height are generally employed.

1. When the head is erect, the intermediate segment is placed so that its top is at the bottom of the pupil.
2. With the head erect, the top of the intermediate segment is placed halfway between the bottom of the pupil and the lower edge of the iris
3. With the head erect, the top of the intermediate is placed one-third of the distance from the bottom of the iris to the bottom of the pupil.

It is necessary to always bear in mind that the fitting of bifocals and trifocals is extremely subjective and that no one position is correct under all circumstances. If the patient is satisfactorily wearing a higher or lower segment than that described above, it is well to continue with the accustomed height.

The Indispensable Dispensing Guide, *The eyecare professional's basic dispensing guide*, Optical Laboratories Association, Facial Measurements and Frame Selection, Page 22 – Vertical Height

Measurements

Vertical height measurements are taken to determine bifocal, trifocal, or progressive height. This measurement is taken from the lowest part of the eyewire to the guideline. The guideline for a bifocal is the lower lid, for a trifocal it is to the lower edge of the pupil, and for progressive addition lenses it is the center of the pupil.

Depending on specific circumstances, the final vertical height measurement might be more, less, or the same as the guidelines measurements. Factors that may affect the final vertical height measurements are:

1. the amount of use at the near viewing area;
2. the customer's posture;
3. the pantoscopic angle;
4. how far the lenses will set from the face;
5. the prescription; and
6. the previous segment location.

When taking a vertical height measurement, you must:

1. adjust the frame before measuring;
2. sit at eye level with the patient;
3. measure to the deepest part of the frame; and
4. double-check your measurement.

Follow the fitting height recommendations of the manufacturer. As with measuring PDs, vertical height measurements can be taken different ways. You can use either a millimeter ruler or mark the lenses. Marking the lenses is preferred because it allows you to observe the marking position on both eyes at the same time.

MEASUREMENT OF SEGMENT HEIGHT – BIFOCALS

Subject Matter Expert Responses:

Banks, Daniel, Opticianry Program Director, Camden County College, NJ:
Lower lid.

Cheevers, Kari, Opticianry Program Director, American Career College, CA:
Lower eyelid margin.

Dennis, Ray, Opticianry Program Director, Middlesex Community College, CT:
Limbus at 6 o'clock.

Goggin, Mike, Opticianry Program Director, Roane State Community College, TN:
We use lower lid line but vary from that depending on the patient's needs.

Hanlin, Pete, LDO, Director - Technical Marketing, Essilor of America:
I have always considered the lower limbus to be the reference position (again, that is the position in Brooks & Borish. Once again, in real practice I have usually subtracted 1 mm or so. Also, there are variations related to the intended use of the lens (the most extreme being "golfing glasses," where a FT-28 may be set exceptionally low).

King, Michael, Opticianry Program Director, Community College of Rhode Island:
Lower lid.

Kotob, Deborah, ECP Education Facilitator, Vision-Ease Lens:
Again, there is no industry absolute that I am aware of. We teach lower lid but also teach the line and tape method for subjective feedback from patient.

Lloyd, Scott, Opticianry Program Director, Ogeechee Technical College, GA:
Lower lid or limbus (whichever is visible).

Martellaro, Robert, President Roberts Optical Ltd.:
Position the segment 6 mm below the bottom of the pupil.

Prescott, Dennis, Opticianry Program Director, Highline College, WA:
I have always used the lower lid margin but always look at previous eyeglasses and discuss preferences with the customer.

Vitale, Michael C., Optical Lab Division of The Vision Council:
Lower lid is the most common. The difference between lower lid and lower limbus means of measuring for bifocal height is merely academic as they typically will result in the same measurement.

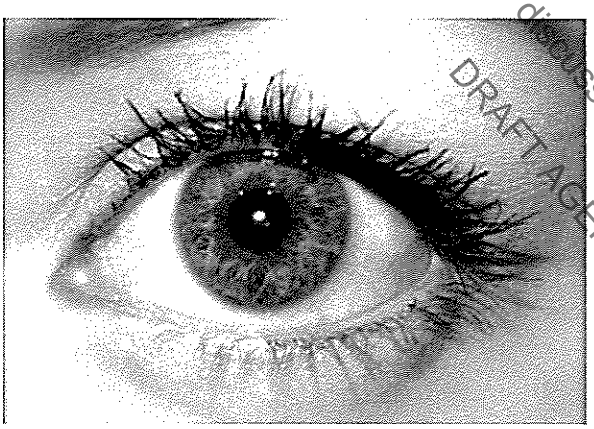
Whitney, Dick, Manager, Industry Standards, Carl Zeiss Vision, Inc.:
Lower lid

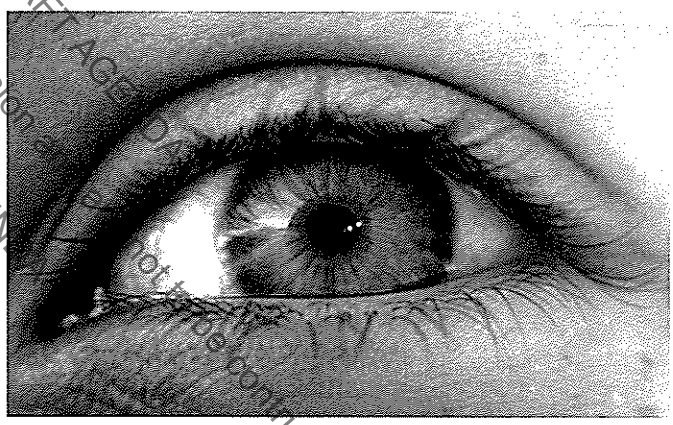
NOTE: The following must be considered when reviewing bifocal height measurements:

In the general population the lid margin can be anywhere from about 3 mm below the lower limbus to 2 or 3 mm above it.
Saude, Trygve. *Ocular anatomy and physiology*. Oxford: Blackwell Scientific Publications, 1993).

Lower Eyelid and Midface Anatomy
In the normal state the lower eyelid margin is at or within ~1 mm of the inferior corneal limbus with the globe in primary position and is 30-31 mm in length. The lower eyelid margin is ~2 mm in thickness.
Albert, D. M. (2008). *Albert & Jakobiec's principles and practice of ophthalmology (3rd ed.)*. Philadelphia: Saunders/Elsevier.

The margin of each eyelid is about 2 mm thick.
Dutton, J. J. (2011) *Atlas of clinical and surgical orbital anatomy (2nd ed.)*. Philadelphia: Elsevier/Saunders.





OTHER SOURCES

Brooks, Clifford W., and Irvin M. Borish. *System for ophthalmic dispensing.* 3rd ed. St. Louis, Mo.: Butterworth Heinemann, 2007.

Lower Limbus Method, pg 70
When using the PD rule to measure bifocal height, hold it vertically with the scale extending downward and align the zero point with the lower limbus. …

Lower Lid Margin Method, pg 71
The lower lid margin is often used as a reference point for measuring bifocal height instead of the lower limbus. …

Subjective Determination, pg 71
Subjective determination is the most accurate means of determining the seg height and of assuring the wearer that the bifocal will be positioned properly. The proper bifocal position for each person, of course, is determined with the occupational and personal characteristics of the individual in mind.

Variations of Seg Height, pg 78
It is not reasonable to expect every person to be best served with a bifocal segment height that comes to the level of the lower limbus. But because some starting point must be used for seg height determination, the lower lid or limbal margin technique was described. These rules should be used as a basis, or starting point, for professional seg measurement. Other variations influence final seg height placement.

Posture, pg 78
Perhaps the most obvious influence on segment height is posture. The person who "walks tall" or erect and carries the head back may find that the normally placed segment is constantly interfering with distance vision. This person would benefit from a segment placed at a lower level than usual because tilting the head back moves the segment higher and into the line of sight.

Height, pg 78
A tall person sometimes needs segments set slightly lower than normal because the eyes turn downward to a greater degree to sight the floor. The bifocal line would be more likely to interfere if placed at the normal level. Shorter persons, however, should not be given higher than normal segs.

Occupational Need, pg 78
The person who works at a desk all day may need a higher (and wider) segment than the person who works outdoors and who seldom is required to do any close work.

Summary, pg 79
As can be seen, a considerable number of factors can influence the bifocal height. Not all of these have been noted here, but those covered in this section can be summarized as follows:

1. Head back – seg lower; head down – seg higher.
2. Tall persons: seg lower.
3. Adapt the height to the occupational need. Office professions (close work) – seg higher; outdoor occupations (distance vision) – seg lower.
4. Set round segs 1 mm higher.
5. Set seg tops in high plus lenses as high as is practical.

The National Academy of Opticianry – *Presbyopia*
12) Seg height. The rule of thumb is to set segs to the lower limbus for beginning bifocal wearers given considerations of height, task and posture.

***20/20 Opticians Handbook* Jobson**
For bifocals, fit to the top of the lower lid…This is a starting point; consider the segment height of the previous glasses, height of the patient and patient satisfaction with their previous lenses.
5. If the patient is tall and uses their eyewear while standing, then 1-2 mm lower might be better. If only for reading, then higher.

Tunnacliffe, Alan H. *Introduction to visual optics*. London: Association of British Dispensing Opticians, 1993.
As a rule, the segment top is placed at the level of the lower limbus (junction of the cornea and sclera) with the head erect and eyes looking straight ahead.

Carl Zeiss Vision Optical Training Guide
How to Measure & Dispense Multifocal Lenses
If a patient is satisfied with their current bifocal height, mark and measure the new bifocal at the same height in relation to the patient's face (ie. lower lid margin, bottom of lashes). If it is a first-time bifocal wearer, the bifocal segment should be placed at the lower lid.

McCleary, Davis S. *The optician training manual: simple steps to becoming a great optician.* Temecula, CA: Santa Rosa Pub., 2009.
The upper line of the bifocal (called the seg) must sit at precisely the proper location, the lower eyelid.

Bifocals & Trifocals: *Solutions for "Short Arms"* By Gary Heiting, OD
Bifocals typically are placed so the line rests at the same height as the wearer's lower eyelid.

Eye Care Professional Magazine *In pursuit of precision* by Alvaro Cordova
A typical bifocal measurement is found at the lower lash line.

Wooton, Davey M. *Optical training: skills and procedures*. St. Louis, MO: Butterworth Heinemann, 2003.
Remember to measure the seg height from the lower eyelid to the farthest bottom inside point of the frame.

Carlton, Jenean. *Frames and lenses.* Thorofare, NJ: SLACK, 2000.
…(Generally, the segment placement of a bifocal begins just beneath the lower lid, or somewhere within a few millimeters of this vicinity.)…

Pallikaris, Ioannis G., Sotiris Plainis, and W. N. Charman. *Presbyopia: origins, effects, and treatment.* Thorofare, NJ: SLACK, 2012.
When determining the height of the segment, a good rule of thumb for the first time flat-top bifocal wearer is to position the top of the segment at the lower lid or lower limbal margin. …

Stamper, Robert L. *Ophthalmic medical assisting: an independent study course*. San Francisco, CA: American Academy of Ophthalmology, 1991.
...In determining segment heights, remember that each patient has different vision requirements and must be treated individually with respect to these special requirements. Most Opticians recommend fitting the top of a bifocal segment level with the patient's lower lid margin. Some patients prefer the bifocal line at a slightly higher or lower level than the lower lid margin, but the segment height usually will not vary more than 1 or 2 mm higher or lower.

Duane, T. D. (1976). *Clinical ophthalmology*. Hagerstown, Md.: Medical Dept., Harper & Row. Chapter 44
For most patients the best location of the top of the segment is approximately 1 mm below the lower limbal margin. In nearly all cases, however, it is safer to err on the low side. Patient dissatisfaction occurs more readily with a segment that is placed too high.

Naval Ophthalmic Support and Training Activity Opticians School Reference Manual
With the frame on the patient, measure from the bottom of the groove (bevel) in the lower eyewire to the top of the lower eyelid when the eye is open.

The Indispensable Dispensing Guide, *The eyecare professional's basic dispensing guide*, Optical Laboratories Association, Facial Measurements and Frame Selection, Page 22 – Vertical Height Measurements
Vertical height measurements are taken to determine bifocal, trifocal, or progressive height. This measurement is taken from the lowest part of the eyewire to the guideline. The guideline for a bifocal is the lower lid, for a trifocal it is to the lower edge of the pupil, and for progressive addition lenses it is the center of the pupil.

Depending on specific circumstances, the final vertical height measurement might be more, less, or the same as the guidelines measurements. Factors that may affect the final vertical height measurements are:
1. the amount of use at the near viewing area;
2. the customer's posture;
3. the pantoscopic angle;
4. how far the lenses will set from the face;
5. the prescription; and
6. the previous segment location.

When taking a vertical height measurement, you must:
1. adjust the frame before measuring;
2. sit at eye level with the patient;
3. measure to the deepest part of the frame; and
4. double-check your measurement.

Follow the fitting height recommendations of the manufacturer. As with measuring PDs, vertical height measurements can be taken different ways. You can use either a millimeter ruler or mark the lenses. Marking the lenses is preferred because it allows you to observe the marking position on both eyes at the same time.

QUESTION 4. Are there universally recognized tolerances for measurements obtained by an Optician when determining segment heights for progressive, trifocal, or bifocal lenses?

TOLERANCE FOR SEGMENT HEIGHT MEASUREMENTS - PROGRESSIVES

Subject Matter Expert Responses:

Banks, Daniel, Opticianry Program Director, Camden County College, NJ:
+/- 0.5 mm

Dennis, Ray, Opticianry Program Director, Middlesex Community College, CT:
Unaware of a tolerance for measurement. Only a tolerance for height in finished pair when specified.

Goggin, Mike, Opticianry Program Director, Roane State Community College, TN:
None.

Hanlin, Pete, LDO, Director - Technical Marketing, Essilor of America:
If pressed for a hard and fast answer, I would say it is reasonable to assume measurements should be within 0.5 mm. But the question becomes "Within 0.5 mm of what?" After all, even if we agree center pupil is the ideal for pupil height, we don't always target that exact spot (for instance, if the patient is exceptionally tall, the height may be lowered). Saying "Within 0.5 mm of whatever you defined as the object being measured" seems rather ambiguous, and I think that is why there are no tolerances associated with practitioner measurements (because the measurement itself is an art of sorts).

Now, if we were testing the competence of an Optician, I think it would be fair to specify exactly what is to be measured- and then it is reasonable to expect that a competent Optician should be able to obtain a measurement within +/-0.5 mm of the actual location of the specified point (assuming the device being used is known to be precise and accurate).

King, Michael, Opticianry Program Director, Community College of Rhode Island:
Patient's performance.

Kotob, Deborah, ECP Education Facilitator, Vision-Ease Lens:
ANSI Tolerance Vertically: Must be within 1 mm of the specified height.

Lloyd, Scott, Opticianry Program Director, Ogeechee Technical College, GA:
None that I'm aware of.

Martellaro, Robert, President Roberts Optical Ltd.:
Tolerances would not really be applicable as far as I can tell.

Prescott, Dennis, Opticianry Program Director, Highline College, WA:
None, but again, the head positions of both Optician and customer are important to get an accurate measurement.

Vitale, Michael C., Optical Lab Division of The Vision Council:
There are no optical industry tolerances on measuring progressive lens height. There are tolerances on the accuracy of mounting that lens into a frame.

Whitney, Dick, Manager, Industry Standards, Carl Zeiss Vision, Inc.:
For the lab, 1 mm is used as a recommended tolerance to fulfill the Rx when the lens is mounted in the frame. There are no "tolerances" on the accuracy to providing the Rx to the lab. What is provided by the dispensing professional to the lab is assumed to be "correct". Of course, if significantly off, the patient may return and complain.

TOLERANCE FOR SEGMENT HEIGHT MEASUREMENTS - TRIFOCALS

Subject Matter Expert Responses:

Banks, Daniel, Opticianry Program Director, Camden County College, NJ:
NJ = +/- 0.5 mm

Dennis, Ray, Opticianry Program Director, Middlesex Community College, CT:
None that I aware of.

Goggin, Mike, Opticianry Program Director, Roane State Community College, TN:
Not sure.

Hanlin, Pete, LDO, Director - Technical Marketing, Essilor of America:
Again, we get into the art of dispensing. All standards of which I am aware relate to meeting the measurement provided by the practitioner- not to the actual measurement itself.

King, Michael, Opticianry Program Director, Community College of Rhode Island:
Relates to patient's preference.

Kotob, Deborah, ECP Education Facilitator, Vision-Ease Lens:
We use ANSI guidelines when training/teaching.

Lloyd, Scott, Opticianry Program Director, Ogeechee Technical College, GA:
None that I'm aware of.

Martellaro, Robert, President Roberts Optical Ltd.:
None that I'm aware of; I believe this is too subjective to write in stone.

Prescott, Dennis, Opticianry Program Director, Highline College, WA:
None that I know of.

Vitale, Michael C., Optical Lab Division of The Vision Council:
There are no optical industry tolerances on measuring trifocal fitting height. There are tolerances on the accuracy of mounting that lens into a frame.

Whitney, Dick, Manager, Industry Standards, Carl Zeiss Vision, Inc.:
None to my knowledge on the measurement.

TOLERANCE FOR SEGMENT HEIGHT MEASUREMENTS - BIFOCALS

Subject Matter Expert Responses:

Banks, Daniel, Opticianry Program Director, Camden County College, NJ:
NJ = +/- 0.5 mm

Dennis, Ray, Opticianry Program Director, Middlesex Community College, CT:
Unware of a tolerance for measurement. Only a tolerance for height in finished pair when specified.

Goggin, Mike, Opticianry Program Director, Roane State Community College, TN:
None.

Hanlin, Pete, LDO, Director - Technical Marketing, Essilor of America:
Again, we get into the art of dispensing. All standards of which I am aware relate to meeting the measurement provided by the practitioner- not to the actual measurement itself.

King, Michael, Opticianry Program Director, Community College of Rhode Island:
Patient's preference.

Kotob, Deborah, ECP Education Facilitator, Vision-Ease Lens:
ANSI tolerance for induced prism is the only tolerance that I can see applying here. Vertical 0.33Δ unless power over ±3.75 D then less than 1 mm difference between left and right PRP.

Lloyd, Scott, Opticianry Program Director, Ogeechee Technical College, GA:
None that I'm aware of.

Martellaro, Robert, President Roberts Optical Ltd.:
None that I'm aware of, probably due to differences in panto tilt, vertex distance, and subjectivity.

Prescott, Dennis, Opticianry Program Director, Highline College, WA:
None that I know of.

Vitale, Michael C., Optical Lab Division of The Vision Council:
There are no optical industry tolerances on measuring bifocal lens height. There are tolerances on the accuracy of mounting that lens into a frame.

Whitney, Dick, Manager, Industry Standards, Carl Zeiss Vision, Inc.:
None if you are talking about measuring this to fill the Rx.

QUESTION 5. When determining the add power for progressive lenses, what is the industry best practice and standardized method (front vertex, back vertex, temporal engraving)?

Subject Matter Expert Responses:

Banks, Daniel, Opticianry Program Director, Camden County College, NJ:
Engraving.

Cheevers, Kari, Opticianry Program Director, American Career College, CA:
Engraving.

Dennis, Ray, Opticianry Program Director, Middlesex Community College, CT:
Power to be measured from the side where the seg is found.

Goggin, Mike, Opticianry Program Director, Roane State Community College, TN:
I've been using the engraving.

Hanlin, Pete, LDO, Director - Technical Marketing, Essilor of America:
Essilor would be one of the manufacturers advocating use of the engraving to measure ADD power. In reality, the near verification point is a.) not a set point (in customized lenses, the near point may move quite a bit both laterally and vertically to account for prismatic effects, reading distance, and other optical characteristics of the lens), and b.) so far from the optical center (PRP) of the lens, and c.) held in a position that is considerably different than it assumes during use that it is virtually impossible to obtain an accurate reading in the practitioner's office.

If a measurement is going to be attempted anyway, there are two additional variables related to the equipment- namely, "IOA vs. FOA" and the side of the lens being measured. Manual lensmeters are FOA (focal point on axis) while automated lensmeters are usually IOA (infinity on axis). Any of the four combinations (CX/IOA; CV/IOA; CX/FOA; CX/IOA) will yield different results (and all the results will still have to be adjusted for the worn position). I believe Essilor's lenses are designed to be read CX/IOA (i.e., I believe the "as worn/compensated" power is given assuming CX/IOA).

King, Michael, Opticianry Program Director, Community College of Rhode Island:
Temporal engraving.

Kotob, Deborah, ECP Education Facilitator, Vision-Ease Lens:
I would not know of any industry standard on this but we recommend comparing both engraving + distance and difference in distance and near front vertex powers.

Lloyd, Scott, Opticianry Program Director, Ogeechee Technical College, GA:
Temporal engraving.

Martellaro, Robert, President Roberts Optical Ltd.:
I rely on the engraving on semi-finished PALs, and almost always the engraving on free-form generated PALs, spot checking new designs only.

Prescott, Dennis, Opticianry Program Director, Highline College, WA:
With different lens materials and indices of refraction, the temporal engraving is the easiest and best standard.

Vitale, Michael C., Optical Lab Division of The Vision Council:
For a progressive addition lens, the industry best practice is to locate the manufacturer's permanent engraving on the temporal side of the lens. The add power is typically abbreviated utilizing 2 digits.

However, if you were to attempt to measure the add power utilizing a lensometer/vertometer, you would measure it on the side of the lens that has the add power. This holds true especially today with all the back side progressive addition lenses that are on the market.

Whitney, Dick, Manager, Industry Standards, Carl Zeiss Vision, Inc.:
As noted in my Opticians handbook article on add power measurement, the only accepted method is to position the segment containing the add surface on the focimeter nose. This means for front side conventional blanks; one must reverse the lens to measure the add.

OTHER SOURCES

Brooks, Clifford W., and Irvin M. Borish.*System for ophthalmic dispensing.* 3rd ed. St. Louis, Mo.: Butterworth Heinemann, 2007.
Verifying Distance Power, Prism Amount, and Add Power, PG 463
In practice the power of the near addition is seldom measured for progressive lenses. This is because the near addition power appears as a hidden number on the front surface of the lens. Instead of using the lensmeter for near power, verifying this hidden number is common practice.

According to instructions published by Essilor, Zeiss and other progressive lens manufacturers, the "ADD Engraving – Appears under the temporal circle and denotes the ADD power. Verification of ADD power should be made with the engraving, not with the near verification circle."

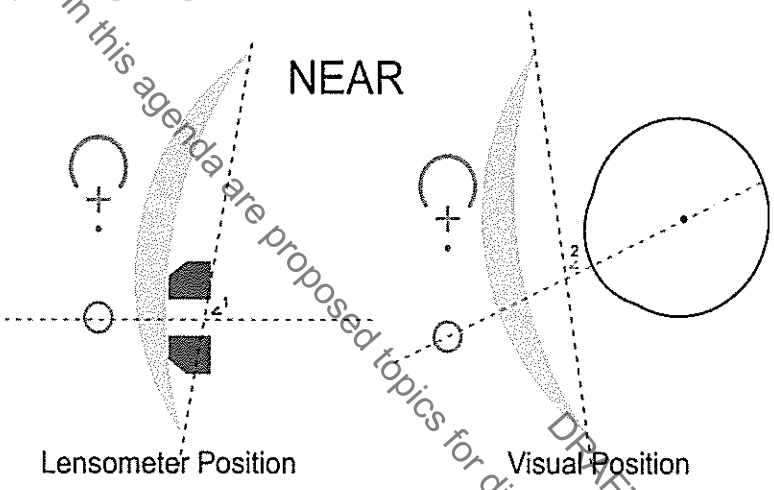
According to the Optical Lab Division Liaison, The Vision Council, 225 Reinekers Lane Ste 700, Alexandria, VA 22314:
Manufacturers did this because most lensmeters are not designed for "off axis" viewing. This is especially true for manual lensmeters. It was also done as it is not real easy to find the exact location of the Near Reference Point (NPR). Most NRP's are not at a fixed location for the lens designs and vary according to add power and base curve. Although the ink mark on the lens from the manufacturer is fixed. For example a 5 base 1.50 add lens might have a NRP of 14 mm down and 2.25 mm in and the same lens with a 2.50 add might be a 13.7 mm down and 2.6 mm in. The ink marking would not vary to accommodate this.

Carl Zeiss Vision
GT2 & GT2 Short by Zeiss
Power Verification
4. Check add power by verifying that the semi-visible add power engraving under the temporal logo matches the first two digits of the prescribed add (e.g."25" signified addition 2.50 D).

Verifying the Optical Properties of Progressive Power Lenses
-Pete Hanlin, ABOM, LDO

Verifying Near Power

The near power in a PAL should be verified using the temporal engraving. On most PALs, this engraving will be two numbers (e.g., "10" indicates a +1.00 ADD, "12" indicates a +1.25 ADD...). Most PALs do feature a *Near Verification Circle*; however, in many instances measurements taken within this circle will be inaccurate. Specifically, measurements may appear to be "weaker" than the ADD noted on temporal engraving.



The depiction on the left illustrates *one* of the reasons the near power of a PAL is difficult to measure with a lensometer. Most importantly, when attempting to read the near power of a PAL in a lensomotor, the angle formed between the optical axis of the lensometer and the front surface of the lens is approximately 6-7° different than the angle formed between the eye and the lens when the lens is worn. (Note that angles "1" and "2" are not congruent in the illustration. Although the eye rotates approximately 12° downwards when viewing through the near area of a PAL, clamping a lens in a lensometer induces about 11° of *retroscopic* tilt, which is deviation of 19° from the position when worn). The effect of lens tilt can be demonstrated in the lensometer. First, clamp the lens and make a measurement of near power (the result will usually be somewhat "weak," especially with higher ADDs). Now measure the lens again, but instead of clamping the lens tilt it back to its approximate position when worn. Normally, a higher level of ADD will be measured when the lens is tilted (the tilt will also usually induce a certain level of astigmatism as well). This is a function of *Martin's Tilt* formula.

There are other factors which make it difficult, if not impossible, to accurately measure the near power of a PAL with a lensometer. First, in modern PALs (e.g., all Varilux PALs since Varilux Comfort), the length and inset of the progression will vary from lens to lens. This customization takes into account the prismatic properties of the lens to best position the near area in front of the wearer. However, all lenses receive the same ink marking. Therefore, the "near verification circle" may not even fall directly over the reading area of a modern PAL. Second, the vertex distance when using the near area of a PAL is slightly greater than the vertex encountered during distance vision (increased vertex distance causes the effective power of the ADD to increase during wear). Finally, most near verification areas are 12 mm or more from the optical center of the lens- a certain level of marginal astigmatism will be present depending on the power of the lens.

For molded lenses, the engraving is an absolute indicator of ADD power, because the engraving is part of the mold. Because a mold will produce 100s- if not 1,000s- of lenses, they are meticulously measured and examined to ensure accuracy. The "engravings" on molded PALs are actually part of the mold (although they are often called "laser engravings," on molded products the "engraving" is actually a raised area on the lens). If the mold says "22," the lens *will* have a progressive surface with an ADD of +2.25 guaranteed. ***Therefore, near power in a progressive lens should be verified using the engravings.***

QUESTIONS RELATING TO PURCELL GROUP OPHTHALMIC SIMULATORS

How were the standards and tolerances for the Purcell group ophthalmic simulators established?

(Jack.McCord@purcellinc.com) ANSWER:
The standards were provided at the time the learning products were produced, several years ago, by the technical leaders at LensCrafters (Now part of Essilor Luxottica). I was the project leader for Purcell. I believe that both of the key leaders retired when the company moved its headquarters.

Regarding the Purcell ophthalmic simulators, how was the ½ mm tolerance for adult progressive lens heights determined?

Responses are from Mark Donohue & Jack McCord
Mark Donohue: Senior Manager, Lab Best Practices, LensCrafters:

LENSCRAFTERS ANSWER:
The example we used on the site is, in some ways, unique. Our usual practice is to allow no tolerance at all in this skill. We've had good luck with a standard practice that requires an "exact" fit, to the limits of the technology. In this circumstance, however, when we built the simulator example, the customer strongly requested a tolerance setting. So, we built this one with that characteristic. I failed to notice that problem when we made the example we are considering.

Anyway, here's our practice and usual recommendation for this skill: In the fitting procedure the optician should achieve "exact" precision of fit through the process of accurate fitting. That is, there should be no "tolerance" setting for taking seg heights. The measurement must be precise for the patient to receive the intended benefit. The scenario is intended to explain that, when the frame was is properly adjusted, the eyewear should produce the optimum outcome for the patient. No doubt, this purpose can be served in other ways. Maybe better.

Regarding the Purcell ophthalmic simulators, how was the ½ mm tolerance for measurement of interpupillary distance using a digital reflection pupilometer selected?

LENSCRAFTERS ANSWER:
The environment where our products are deployed may be unusual. We are standardized on one high-performance Reichert pupilometer. The Reichert PDM Digital PD Meter **[*SEE QUESTION TO REICHERT*]** that the simulation was modeled after, claims to be accurate within 0.5 mm (information from the user's manual). This pupilometer also has calibration markings that allow the optician to easily verify accuracy of the device on a daily basis. During the development of this simulation, users of the test were able to consistently achieve the correct monocular/binocular PD if

the slide indicator bisected the reflected light at the center of the patient's cornea. In standardized testing routines, field performance is better than 0.5 mm. LensCrafters assures that measurements made in our stores are within 0.1 mm or better. And we have standardized on that requirement for our test performance-evaluation routines. In less standardized, controlled environments, that level of performance may be harder to maintain." ***NOTE: According to the ABO Pre-Test Tutorial, the simulation is modeled on the Essilor corneal reflection pupilometer.***

QUESTION TO REICHERT:
According to your website, the Reichert PDM Digital PD Meter "results are accurate to within 0.5 mm." My research indicates that no other manufacturer claims this degree of accuracy and I'm interested in how this was determined. Does the 0.5 mm represent the actual accuracy or is this the PD measurement increments?

REICHERT TECHNOLOGIES
David A. Taylor
Director, Product Management & Business Development:
I looked into this and the best I can figure is that the device reads in .5 mm increments (resolution) and whoever wrote the brochure concluded that this was the accuracy specification.

Now, we can measure test-eye fixtures to verify what the actual "accuracy" of the unit is. And I suspect it really is accurate to within .5 mm in the lab. Whether or not that translates into the same level of accuracy in human subjects, with all the variables (eye movement, subject movement, user movement, etc), is a different story.

… I would be happy to suggest that we update our brochure and website if this will be helpful. I can also serve as an industry "expert" on this subject if you need further assistance in trying to change the status quo.

According to ANSI.1-2020 when, "powers are measured in the range of +/- 5 D, it is generally accepted that errors of up to 0.06 D can be expected for standard (low cost) focimeters." Was this considered in the Purcell ophthalmic simulator simulation construction or was an exact measurement required?

LENSCRAFTERS ANSWER:
Thank you for forwarding the questions. Since the Purcell Group has designed this as a teaching tool, these points may be outside the original purpose. These are simply points of interest that have been presented to me.

Regarding "At +/- 5 D errors up to .06 D can be expected." LensCrafters seems to indicate that this can be controlled with technique. First, the device is always adjusted for the users' eyes then checked with no lens to verify the power indicator reads 0.00. Second, the final movement of the power drum, when neutralizing sphere and cylinder powers, is always turned in the same direction (toward the operator), this eliminates

gear lash and allows for consistent readings. So, in a controlled environment, there can be an aggressive goal. In a less controlled environment, the conditions of the LensCrafters recommendation would have to be very clear.

Optician Apprenticeship

From: Emerson, Caly (DOLI)
Sent: Wednesday, May 3, 2023 10:23 AM
To: Smith, Kelley (DPOR)
Subject: Optician Apprenticeship

Good morning Kelley,
A question has recently come up regarding the Optician Standards and who can be considered as a "mentor/journeyworker" to satisfy the 1:1 Apprentice to Jounreyworker and 1:2 thereafter ratio, as stated in the Minimum Standards.
The standards do indicate Licensed Optician; however, would an Optometrist count as a journeyworker to use as a mentor to allow for the 2:3 Apprentice to Mentor/Journeyworker ratio requirement?

I hope this is making sense.

Thanks for your time.

Thank you,
Caly Emerson
Registered Apprenticeship Education Specialist, Division of Registered Apprenticeship
Virginia Department of Labor and Industry
600 East Main Street, Suite 207
Richmond, VA 23219
[redacted]
Website: http://www.doli.virginia.gov

#RApays Virginia Registered Apprenticeship
Your Next Step
watch here: https://www.youtube.com/watch?v=J7avbtL1XEI&t=4s

Optician Ratios

From: Emerson, Caly (DOLI)
Sent: Thursday, June 15, 2023 12:36 PM
To: Smith, Kelley (DPOR)
Subject: Optician Ratios

Good afternoon Kelly,
I noticed that the service trades industries have changed the licensed mentor to apprentice ratio to 1:2. Is there any plan to change the Optician ratio to mimic this?

Historically, service trades were set up with the same ratio currently in place for the Opticians. With the change to service trades, I am hopeful this change will be coming for Opticians.

Please let me know. Thanks!

Thank you,
Caly Emerson
Registered Apprenticeship Education Specialist, Division of Registered Apprenticeship
Virginia Department of Labor and Industry
600 East Main Street, Suite 207
Richmond, VA 23219
Website: http://www.doli.virginia.gov

#RApays Virginia Registered Apprenticeship
Your Next Step
watch here: https://www.youtube.com/watch?v=9TaybtLKXEI&t=4s

Hearing Aid Specialists and Opticians
BOARD STATISTICS

Licenses and Temporary Permits Issued	1-1-2022 To 12-31-2022	1-1-2023 to 6-1-2023
Hearing Aid Specialist by Exam	40	14
Hearing Aid Specialist Doctor of Audiology Exam Waived	29	12
Hearing Aid Specialist by Reciprocity	4	1
Hearing Aid Specialist Temporary Permits	42	12
Optician by Exam	10	4
Optician by Reciprocity	7	4
CLE by Exam	0	1
CLE by Reciprocity	0	0
Optician License App Criminal History Review (Pass Matrix)	0	0
Regulant Populations	**1-1-2023**	**6-1-2023**
Hearing Aid Specialist Temporary Permits	43	46
Hearing Aid Specialists	860	776
Opticians	1,799	1,714

HEARING AID SPECIALISTS

GENERAL EXAM STATISTICS REPORT - PRACTICAL

EXAM DATE	TOTAL EXAMS TAKEN	TOTAL EXAMS PASSED	TOTAL PERCENT PASSED	FIRST TIME EXAMS TAKEN	FIRST TIME EXAMS PASSED	FIRST TIME PERCENT PASSED	RE-EXAM EXAMS TAKEN	RE-EXAM EXAMS PASSED	RE-EXAM PERCENT PASSED	TOTAL EXAMINEES SCHEDULED
MAY2023	11	06	54.54%	10	06	60.00%	01	00	00.00%	11

CONTENT DESCRIPTION	EXAMS TAKEN	EXAMS PASSED	PERCENT PASSED
AUDIOMETRIC	11	10	90.90%
MAINTENANCE AND REPAIR	10	06	60.00%
SPEECH TESTING	10	10	100.00%
EARMOLD IMPRESSIONS	10	10	100.00%

DRAFT AGENDA

HEARING AID SPECIALISTS

GENERAL EXAM STATISTICS REPORT – WRITTEN

EXAM DATE	CONTENT DESCRIPTION	EXAMS TAKEN	TOTAL EXAMS PASSED	PERCENT PASSED
FEBRUARY 1 THROUGH MARCH 31, 2023	RULES & REGULATIONS	04	04	100.00%
	ILE -THEORY	07	03	42.85%

NOTE** ILE AND RULES/REGS – WRITTEN STATISTICS NOT AVALIABLE UNTIL AFTER TESTNG WINDOW CLOSES JUNE 30, 2023

OPTICIANS STATISTICS REPORT

COMPUTER BASE TESTING (CBT)

EXAM DATE WRITTEN-ABO	TOTAL EXAMS TAKEN	TOTAL EXAMS PASSED	TOTAL PERCENTAGE PASSED
FEBRUARY – MAY 2023	13	12	92.30%
OPTICIAN PRACTICAL			
FEBRUARY – MAY 2023	21	11	52.38%

EXAMS
6/7/2023
RSTARR

Department of Professional and Occupational Regulation

TO: VIRGINIA BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS
FROM: KELLEY SMITH, EXECUTIVE DIRECTOR
SUBJECT: OPTICIAN LENSES AND FRAME STANDARDS - REGULATORY ACTION TO CONFORM TO ANSI STANDARDS
DATE: MAY 23, 2023

Attached you will find the draft revisions to the Optician Lenses and Frame. The Board for Hearing Aid Specialists and Opticians seeks to revise the existing regulations for lenses and frames to conform to the American National Standard Institute (ANSI) practices. The amended language was initiated on November 1, 2022, by the Opticians Regulatory Review Committee and adopted by the Board for Hearing Aid Specialists and Opticians on December 14, 2022. The regulatory amendment modifies the lenses and frames specifications to the ANSI Z80.1 and Z87.7 prescription ophthalmic lens standards. The Occupational Safety and Health Administration (OSHA) has made the ANSI standards a regulatory requirement. The regulatory change will eliminate outdated specifications and will align the regulations with the national standards and OSHA regulatory requirements.

If the Board wishes to proceed with this change, it can do so with a motion to "to adopt the proposed non-controversial regulatory change."

18VAC80-30-120. Lenses and frames standards.

A. Licensees shall follow ANSI Z80.1 and Z87.1 standards for dress and safety eyewear.

~~A. Power Tolerance (diopters).~~

~~Sphere: Plano to ±.6.50~~	~~±.13 diopter~~
~~Above ±.6.50~~	~~±2%~~
~~Cylinder: Plano; - 2.00~~	~~±.13 diopter~~
~~-2.12 to -4.50~~	~~±.15 diopter~~
~~above -4.50~~	~~±4%~~

~~B. Cylinder Axis.~~

~~Cyl. Power Diopters~~	~~Degrees ±~~
~~0.12 – 0.37~~	~~7°~~
~~0.50 – 0.75~~	~~5°~~
~~0.87 – 1.50~~	~~3°~~
~~1.62 and above~~	~~2°~~

~~C. Distance Optical Center. Contribution to net horizontal prism from processing should not exceed 2/3 prism diopter. A maximum of ±2.5mm variation from the specified distance optical center is permissible in higher power lens combinations.~~

~~D. Prism Tolerances (Vertical). Contribution to imbalance from processing should not exceed 1/3 prism diopters. A maximum of 1.0mm difference in vertical level is permissible in higher power lens combinations.~~

~~E. Segment Location.~~

~~Vertical~~	~~±.1.0 mm~~
~~Horizontal~~	~~±.2.5 mm~~

~~Tilt or twist in the case of a flat-top segment, the tilt of its horizontal axis should be less than 1/2 mm in differential elevation between the segment edges.~~

~~F. Multifocal Additions.~~

~~Plane + 8.00~~	~~±.13 diopter~~
~~Above +8.00~~	~~±.18 diopter~~

~~G. Base Curve. When specified, the base curve should be supplied within ±0.75 diopter.~~

~~H. Warpage. The cylindrical surface power induced in the base curve of a lens should not exceed 1 diopter. This recommendation need not apply within 6mm of the mounting eyewire.~~

~~I. Localized errors (aberration). Areas outside a 20mm radius from the specified major reference point or optical center need not be tested for aberration. Progressive lenses are exempt from this requirement.~~

Statutory Authority

§ 54.1-201 of the Code of Virginia.

Historical Notes

Former 18VAC100-20-85 derived from Virginia Register Volume 17, Issue 9, eff. March 1, 2001; amended and renumbered as 18VAC80-30-120, Virginia Register Volume 28, Issue 23, eff. August 15, 2012.

Department of Professional and Occupational Regulation

TO: VIRGINIA BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS
FROM: KELLEY SMITH, EXECUTIVE DIRECTOR
SUBJECT: OPTICIANS REGULATORY REDUCTION REVIEW
DATE: JUNE 1, 2023

At the June 21, 2023, meeting, the Board will need to approve a Notice of Intended Regulatory Action ("NOIRA") to initiate these regulatory changes. Please note that you will be voting on these specific changes.

The Board can initiate the NOIRA with a motion to "initiate a Notice of Intended Regulatory Action regarding regulatory reduction."

Project 7491 - NOIRA

Board For Hearing Aid Specialists And Opticians

General Regulatory Reduction Initiative

18VAC80-30-10. Definitions.

The following words and terms when used in this chapter shall have the following meanings, unless the context clearly indicates otherwise:

"Active employment" engages in the practice of opticianry.

"Apprentice" means a person at least 16 years of age who is covered by a written agreement with an employer and approved by the Virginia Apprenticeship Council.

"Board" means the Board for Hearing Aid Specialists and Opticians.

"Contact lens endorsed optician" means any person not exempted by § 54.1-1506 of the Code of Virginia who is a Virginia licensed optician and who has received a contact lens endorsement from the board, who fits contact lenses on prescription from licensed physicians or licensed optometrists for the intended wearers.

"Department" means the Virginia Department of Professional and Occupational Regulation.

"Fit or dispense" means to measure, adapt, fit or adjust eyeglasses, spectacles, lenses, or appurtenances to the human face, or to verify the prescription to be correct in the prescription eyeglasses or prescription optical devices.

"Licensed optician" means any person who is the holder of a license issued by the board.

"Optician" means any person not exempted by § 54.1-1506 of the Code of Virginia who prepares or dispenses eyeglasses, spectacles, lenses, or related appurtenances for the intended wearers or users on prescriptions from licensed physicians or licensed optometrists, or as duplications or reproductions of previously prepared eyeglasses, spectacles, lenses, or related appurtenances; or who, in accordance with such prescriptions, duplications or reproductions, measures, adapts, fits, and adjusts eyeglasses, spectacles, lenses, or appurtenances to the human face.

"Opticianry" means the personal health service that is concerned with the art and science of ophthalmic optics as applied to the compounding, filling, and adaptations of ophthalmic prescriptions, products, and accessories.

18VAC80-30-20. Qualifications of applicant.

An applicant for a license shall furnish satisfactory evidence on an application provided by the board establishing that:

1. The applicant is at least 18 years of age unless emancipated under the provisions of § 16.1-333 of the Code of Virginia;

2. The applicant is a graduate of an accredited high school, has completed the equivalent of grammar school and a four-year high school course, or is a holder of a certificate of general educational development;

3. The applicant is in good standing as a licensed optician in every jurisdiction where licensed; Applicant shall disclose to the board at the time of application for licensure, any disciplinary action taken in Virginia and all other jurisdictions in connection with the applicant's practice as an optician. This includes monetary penalties, fines, suspensions, revocations, surrender of a license in connection with a disciplinary action, or voluntary termination of a license. The applicant shall disclose to the board at the time of application for licensure if he has been previously licensed in Virginia as an optician.

Upon review of the applicant's prior disciplinary action, the board, in its discretion, may deny licensure to any applicant wherein the board deems the applicant is unfit or unsuited to engage in opticianry. The board will decide each case by taking into account the totality of the circumstances. Any plea of nolo contendere or comparable plea shall be considered a disciplinary action for the purposes of this section. The applicant shall provide a certified copy of a final order, decree, or case decision by a court, regulatory agency, or board with the lawful authority to issue such order, decree, or case decision, and such copy shall be admissible as prima facie evidence of such disciplinary action.

~~4. The applicant has not been convicted in any jurisdiction of a misdemeanor or felony involving sexual offense or physical injury, or any felony involving drug distribution or that directly relates to the profession of opticianry. The board shall have the authority to determine, based upon all the information available, including the applicant's record of prior convictions, if the applicant is unfit or unsuited to engage in the profession of opticianry. Any plea of nolo contendere shall be considered a conviction for the purposes of this subdivision. The licensee shall provide a certified copy of a final order, decree, or case decision by a court or regulatory agency with the lawful authority to issue such order, decree, or case decision, and such copy shall be admissible as prima facie evidence of such conviction. This record shall be forwarded by the licensee to the board within 10 days after all appeal rights have expired;~~ In accordance with § 54.1-204 of the Code of Virginia, each applicant shall disclose the following information regarding criminal convictions in Virginia and all other jurisdictions:

a. All misdemeanor convictions that occurred three years or more involving sexual offense and physical injury; and

b. All felony convictions involving sexual offense, physical injury, drug distribution, or that directly relates to the profession of opticianry.

The board shall have the authority to determine, based upon all the information available, including the applicant's record of prior convictions, if the applicant is unfit or unsuited to engage in the profession of opticianry. Any plea of nolo contendere shall be considered a conviction for the purposes of this subdivision. The licensee shall provide a certified copy of a final order, decree, or case decision by a court or regulatory agency with the lawful authority to issue such order, decree, or case decision, and such copy shall be admissible as prima facie evidence of such conviction. This record shall be forwarded by the licensee to the board within 10 days after all appeal rights have expired;

5. The applicant has successfully completed one of the following education requirements:

a. A board-approved two-year course in a school of opticianry, including the study of topics essential to qualify for practicing as an optician; or

b. A two-year apprenticeship, including all required related technical instruction, while registered in the apprenticeship program in accordance with the standards established by the state Department of Labor and Industry, Division of Registered Apprenticeship, and approved by the board;

6. The applicant has disclosed his current mailing address;

7. The nonresident applicant for a license has filed and maintained with the department an irrevocable consent for the director of the department to serve as service agent for all actions filed in any court in the Commonwealth; and

8. The applicant shall certify, as part of the application, that the applicant has read and understands Chapter 15 (§ 54.1-1500 et seq.) of Title 54.1 of the Code of Virginia and the regulations of the board.

18VAC80-30-30. Opticians licensed in another state.

A. ~~An optician licensed in another state seeking to be licensed as an optician in Virginia shall submit an application on a form provided by the board with the required fee. All fees are nonrefundable and shall not be prorated.~~ Every applicant for Virginia licensure through endorsement who is currently licensed as an optician in good standing in another jurisdiction shall provide information upon application establishing that the requirements and standards under which the license was issued are substantially equivalent to and not conflicting with the provisions of this chapter. The applicant shall file the application for endorsement and pay a fee to the board.

B. The board, using the following standards, shall issue a license to any person licensed in another state who:

1. Has met requirements equivalent to those listed in 18VAC 80-30-20A.1-A.4; and

2. Has passed a substantially equivalent examination.

18VAC80-30-40. ~~Registration for voluntary practice by out of state licensees.~~ (Repealed.)

~~Any optician who does not hold a license to practice in Virginia and who seeks registration in accordance with subdivision 5 of § 54.1-1506 of the Code of Virginia shall:~~

~~1. File a complete application for registration on a form provided by the board within 15 days prior to engaging in such practice. An incomplete application will not be considered;~~

~~2. Provide a complete list of professional licensure in each state in which he has held a license and a copy of any current license;~~

~~3. Provide a name of the nonprofit organization, the dates and location of the voluntary provision of services; and~~

~~4. Provide a notarized statement from a representative of the nonprofit organization attesting to its compliance with the provisions of subdivision 5 of § 54.1-1506 of the Code of Virginia.~~

18VAC80-30-50. Fees.

A. The fee for examination ~~or examinations shall consist of the combination of an administrative charge of $25 (spectacle), $25 (contact lens), and the appropriate contract charges.~~ will be the appropriate contract charges to the board by an outside vendor. Examination service contracts shall be established in compliance with the Virginia Public Procurement Act (§ 2.2-4300 et seq. of the Code of Virginia). The total examination fee shall not exceed ~~a~~ the cost of $1,000 to the applicant.

B. All application fees for licenses are nonrefundable and the date of receipt by the board or its agent is the date which will be used to determine whether it is on time.

C. Application ~~and examination~~ fees must be submitted with the application for licensure.

The following fees shall apply:

FEE TYPE	AMOUNT DUE	WHEN DUE
Application for licensure	$100	With application
Application for contact lens certification	$100	With application
Renewal	$100	Up to the expiration date on the license with a 30-day grace period
Late renewal (includes renewal fee)	$125	Between 30 and 60 days after the expiration date on the license

	Reinstatement (includes renewal and late renewal fees)	$225	After 60 days following the expiration date on the license

18VAC80-30-60. Examinations.

A. All examinations required for licensure shall be approved by the board and administered by the board, or its agents or employees acting on behalf of the board.

B. The board shall schedule an examination to be held at least twice each calendar year. ~~at a time and place to be designated by the board.~~

C. The applicant shall follow all rules established by the board with regard to conduct at an examination. Such rules shall include any written instructions communicated prior to the examination date and any instructions communicated at the site, either written or oral, on the date of the examination. Failure to comply with all rules established by the board with regard to conduct at an examination shall be grounds for denial of application.

18VAC80-30-70. Content of optician examination and reexamination.

A. Applicants for licensure shall pass a written examination and a practical examination approved by the board. An applicant shall pass the written and practical examination within two years of the initial test date. After two years, the applicant shall file a new application and pay the required fee. Any applicant who fails the written or practical examination, or both examinations, shall be required to be reexamined on the failed examination(s) and shall pay the reexamination fee(s).

B. The optician examination given by the board ~~may~~ will include, but is not limited to, the following topics:

1. Ophthalmic materials;
2. Ophthalmic optics and equipment;
3. Ophthalmic spectacle lens grinding;
4. Prescription interpretation;
5. Theory of light;
6. Finishing, fitting and adjusting of eyeglasses and frames;
7. Ethics of relationship in respect to patient and physician or optometrist;
8. Anatomy and physiology; and
9. Applicable laws and regulations.

~~C. Any applicant who fails the written or practical examination, or both examinations, shall be required to be reexamined on the failed examination(s) and shall pay the reexamination fee(s).~~

~~D. An applicant shall pass the written and practical examination within two years of the initial test date. After two years, the applicant shall file a new application and pay the required fee.~~

18VAC80-30-80. Endorsement to fit contact lenses.

The board shall administer a contact lens examination to fit contact lenses. The "Contact Lens" endorsement shall be mandatory for licensed opticians to fit contact lenses as set out in §§ 54.1-1508 and 54.1-1509 of the Code of Virginia, and the contact lens endorsement shall not be issued unless the individual's license is in good standing. ~~A contact lens endorsed optician is any Virginia licensed optician who has been endorsed by the board to fit contact lens.~~

18VAC80-30-90. Content of contact lens endorsement examination and reexamination.

A. The contact lens endorsement examination administered by the board ~~may~~ will include, but is not limited to, the following topics:

1. Rigid lens verification;

2. Lens identification;

3. ~~Keratomy~~ Keratometry;

4. Slit lamp;

5. Slides (fitting patterns, edge patterns, quality stains); and

6. Insertion/removal.

~~B. Any applicant who fails the written or practical contact lens examination, or both examinations, who desires to retake the examination(s), shall be required to be reexamined on the failed examination(s) and shall pay the reexamination fee(s).~~

~~C~~B. An applicant shall pass the written and practical examination ~~within two years of the initial test date.~~ approved by the board. An applicant shall pass the written and practical examination within two years of the initial test date. After two years, the applicant shall file a new application and pay the required fee.

18VAC80-30-100. License renewal required.

A. Licenses issued under this chapter shall expire 24 months from the last day of the month in which the license was issued.

B. The board shall mail a renewal application form to the licensee ~~at the last known mailing address~~. Failure to receive this notice does not relieve the licensee of the obligation to renew. Prior to the expiration date shown on the license, each licensee desiring to renew his license must return all of the required forms and the appropriate fee to the board as outlined in 18VAC80-30-50. ~~If the licensee fails to receive the renewal notice, a copy of the existing license shall be submitted to the board with the required fee.~~

C. Licensees shall be required to renew their license by submitting the appropriate fee made payable to the Treasurer of Virginia. Any licensee who fails to renew within 30 days after the license expires shall pay a late renewal fee, in addition to the renewal fee, as set out in 18VAC80-30-50.

D. The board, in its discretion and for just cause, may deny renewal of a license. ~~Upon~~ Before such denial, the applicant for renewal may request that a proceeding be held in accordance with the provision of the Administrative Process Act (§ 2.2-4000 et seq. of the Code of Virginia).

18VAC80-30-110. Reinstatement required.

A. If a licensee fails to renew his license within 60 days after the expiration date on the license, the licensee must apply for reinstatement on a form provided by the board.

1. Individuals for reinstatement shall continue to meet the standards of entry as set out in subdivisions ~~1~~3 through ~~8~~4 of 18VAC80-30-20.

2. Individuals for reinstatement shall submit the required fee as set out in 18VAC80-30-50.

B. Twenty-four months after the expiration of the license, the individual may be reinstated if he can show proof of continuous, active, ethical, and legal practice. ~~outside of Virginia.~~ If not, the individual must show proof of completion of a board-approved review course which measures current competence. Credit will not be allowed for any ~~review~~ reinstatement course which has not been approved by the board prior to administration of the course.

C. Sixty months after the expiration of the license, the individual, who cannot show proof of continuous, active, ethical, and legal practice ~~outside of Virginia~~, shall be required to apply as a new applicant for licensure. He shall be required to meet all current education requirements and retake the board's written and practical examinations.

D. The board, in its discretion and for just cause, may deny reinstatement of a license. ~~Upon~~ Before such denial, the applicant for reinstatement may request that a proceeding be held in

accordance with the provisions of the Administrative Process Act (§ 2.2-4000 et seq. of the Code of Virginia).

E. A licensee who reinstates his license shall be regarded as having been continually licensed without interruption. Therefore, the licensee shall remain under the disciplinary authority of the board during the entire period and may be held accountable for his activities during this period. Nothing in these regulations shall divest the board of its authority to discipline a licensee for a violation of the law or regulations during the period of licensure as set out in this provision.

18VAC80-30-120. Lenses and frames standards.

A. ~~Power Tolerance (diopters).~~ Licensees shall follow ANSI Z80.0 and Z87.1 standards for dress and safety eyewear.

~~Sphere: Plano to ±.6.50~~	~~±.13 diopter~~
~~Above ±.6.50~~	~~±2%~~
~~Cylinder: Plano - 2.00~~	~~±.13 diopter~~
~~-2.12 to -4.50~~	~~±.15 diopter~~
~~above -4.50~~	~~±4%~~

~~B. Cylinder Axis.~~

~~Cyl. Power Diopters~~	~~Degrees ±~~
~~0.12 - 0.37~~	~~7°~~
~~0.50 - 0.75~~	~~5°~~
~~0.87 - 1.50~~	~~3°~~
~~1.62 and above~~	~~2°~~

~~C. Distance Optical Center. Contribution to net horizontal prism from processing should not exceed 2/3 prism diopter. A maximum of ±2.5mm variation from the specified distance optical center is permissible in higher power lens combinations.~~

~~D. Prism Tolerances (Vertical). Contribution to imbalance from processing should not exceed 1/3 prism diopters. A maximum of 1.0mm difference in vertical level is permissible in higher power lens combinations.~~

~~E. Segment Location.~~

~~Vertical~~	~~±.1.0 mm~~
~~Horizontal~~	~~±.2.5 mm~~

~~Tilt or twist in the case of a flat top segment, the tilt of its horizontal axis should be less than 1/2 mm in differential elevation between the segment edges.~~

~~F. Multifocal Additions.~~

~~Plano + 8.00~~	~~±.13 diopter~~
~~Above + 8.00~~	~~±.18 diopter~~

~~G. Base Curve. When specified, the base curve should be supplied within ±0.75 diopter.~~

~~H. Warpage. The cylindrical surface power induced in the base curve of a lens should not exceed 1 diopter. This recommendation need not apply within 6mm of the mounting eyewire.~~

~~I. Localized errors (aberration). Areas outside a 20mm radius from the specified major reference point or optical center need not be tested for aberration. Progressive lenses are exempt from this requirement.~~

18VAC80-30-130. Contact lens standards.

To fit contact lenses, the following shall be done:

1. The prescription (RX) must show evidence that contact lenses may be worn by the patient before the prescription can be filled by the ~~licensed~~ contact lens endorsed optician. Verbal approval from the optometrist or ophthalmologist or its agents or employees is acceptable. The ~~licensed~~ contact lens endorsed optician must make a notation in the patient's record of the name of the authorizing optometrist or ophthalmologist and the date of the authorization.

2. The optician must use all the following to fit contact lenses:

a. Slit Lamp;

b. Keratometer and Topographer; and

c. Standardized Snellen type acuity chart.

18VAC80-30-140. Display of license.

Every person to whom a current license has been granted under this chapter shall visibly display his unaltered license in a conspicuous place in plain view of the public in the principal office in which he works. A ~~duplicate~~ clear and legible copy of the license ~~which has been notarized~~ shall be posted in any branch offices.

18VAC80-30-150. Notification of change of address or name.

Notice in writing shall be given to the board in the event of any change of name or address. Such notice shall be ~~mailed~~ submitted to the board within ~~30~~ 60 days of the change of name or address. The board shall not be responsible for the licensee's failure to receive notices, communications and correspondence caused by the licensee's failure to promptly notify the board in writing of any change of name or address.

18VAC80-30-160. Grounds for disciplinary action.

A. The board is empowered to revoke, suspend, or refuse to grant or renew a license and is empowered to impose a fine up to the statutory limit, as authorized under § 54.1-202 of the Code of Virginia, per violation on a licensee for any of the following reasons:

1. Using nonprescribed controlled substances as defined in § 54.1-3401 of the Code of Virginia or alcohol at the work place during working hours;

2. Displaying professional incompetence or negligence, including failure to comply with this chapter ~~part~~ in the performance of opticianry;

3. Presenting false or fraudulent information on an application certifying possession of the qualifications required under 18VAC80-30-20;

4. Violating or inducing others to violate any provisions of Chapter 1, 2, 3, or 15 of Title 54.1 of the Code of Virginia, or of any other statute applicable to the practice of the profession herein regulated, or of any provisions of this chapter;

5. Publishing or causing to be published any advertisement related to opticianry that is false, deceptive, or misleading;

6. Having been convicted in any jurisdiction of a misdemeanor within the last 3 years involving sexual offense and physical injury or a felony involving sexual offense, ~~or~~ physical injury, ~~or of any felony involving~~ drug distribution, or that directly relates to the

profession of opticianry. The board shall have the authority to determine, based upon all the information available, including the applicant's record of prior convictions, if the applicant is unfit or unsuited to engage in the profession of opticianry. Any plea of nolo contendere shall be considered a conviction for the purposes of this section. The licensee shall provide a certified copy of a final order, decree or case decision by a court or regulatory agency with the lawful authority to issue such order, decree or case decision, and such copy shall be admissible as prima facie evidence of such conviction. This record shall be forwarded by the licensee to the board within 10 days after all appeal rights have expired;

7. Having been disciplined by another jurisdiction in the practice of opticianry. Documentary evidence of such discipline shall be submitted by the licensee to the board within 10 days after all appeal rights have expired; or

8. Allowing any person to engage in the practice of opticianry, except an optician apprentice or student enrolled in a course in a school of opticianry under the direct supervision of a licensed optician.

B. A finding of improper or dishonest conduct in the practice of the profession by a court of competent jurisdiction shall be cause for disciplinary action.

18VAC80-30-170. Accountability of licensee.

A licensee shall be responsible for his acts or omissions and for the acts of his agents or employees or his staff in the performance of opticianry services.

18VAC80-30-180. ~~Approval of review~~ Board Approved Reinstatement courses.

A. ~~Review~~ Reinstatement courses set out in this chapter shall be approved by the board, except those provided by institutions, schools and universities approved by the State Council of Higher Education for Virginia., ~~for which continuing education units are awarded. Training~~ Reinstatement courses requiring board approval shall be approved by the board prior to commencing in accordance with subsection B of this section.

~~B. Training activities for which experience credit may be granted must be conducted in general conformance with the International Association for Continuing Education and Training's "Criteria and Guidelines for Quality Continuing Education and Training Programs: the CEU and Other Measurement Units," 1998. The board reserves the right to waive any of the requirements of the association's guidelines on a case by case basis. Only classroom, laboratory and field trip contact time will be used to compute training credits. No credit will be given for breaks, meals, or receptions.~~

~~1. Organization. The board will only approve training offered by a sponsor who is an identifiable organization with a mission statement outlining its functions, structure, process and philosophy, and that has a staff of one or more persons with the authority to administer training.~~

~~2. Training records. The board will only approve training offered by a sponsor who maintains training records for all participants for a minimum of five years, and who has a written policy on retention and release of training records.~~

~~3. Instructors. The board will only approve training conducted by personnel who have demonstrated competence in the subject being taught, an understanding of the learning objective, a knowledge of the learning process to be used, and a proven ability to communicate.~~

~~4. Objectives. The board will only approve courses that have a series of stated objectives that are consistent with the job requirements of an optician. The training content must be consistent with those objectives.~~

~~5. Course completion requirements. For successful completion of a training program, participants must attend 90% or more of the class contact time and must demonstrate their learning through written examinations, completion of a project, self assessment, oral examination, or other assessment technique~~.

~~C~~B. The board shall consider the following information, to be submitted by the instructor, institution, school or university on forms provided by the board, at least 45 days prior to the scheduled training activity:

1. Course information.

a. Course title;

b. Planned audience;

c. Name of sponsor;

d. Name, address, phone number of contact person;

e. Schedule presentation dates;

f. Detailed course schedule, hour-by-hour;

g. List of planned breaks;

h. Scheduled presentation location(s); and

i. Relevancy of course to opticianry licensing~~.~~ topics as listed 18VAC80-30-70.

2. Instructor qualifications.

a. Name of instructor;

b. Title of instructor; and

c. Summary of qualifications to teach this course.

3. Training materials.

a. Course objectives -- A listing of the course objectives stated in terms of the skills, knowledge, or attitude the participant will be able to demonstrate as a result of the training;

b. Course outline -- A detailed outline showing the planned activities that will occur during the training program, including major topics, planned presentation sequence, laboratory and field activities, audio-visual presentations, and other major activities;

c. Course reference materials -- A list of the name, publisher and publication date for commercially available publications; for reference materials developed by the course sponsor or available exclusively through the course, a copy of the reference materials;

d. Audio-visual support materials -- A listing of any commercially available audio-visual support material that will be used in the program; a brief description of any sponsor or instructor generated audio-visual material that will be used; and

e. Handouts -- Identification of all commercially available handout material that will be used; copies of all other planned handouts.

4. Determination of successful completion. A description of the means that will be used to determine the successful completion of the training program by individual attendees, such as examinations, projects, personal evaluations by the instructor, or other recognized evaluation techniques.

~~D~~C. Recurring training programs. If there are plans to present the same course of instruction routinely at multiple locations with only minor modifications and changes, the board may approve the overall program rather than individual presentations if so requested by the sponsor.

1. The board shall consider all of the information listed above except those items related to specific offerings of the course.

2. Board approval may be granted for a specific period of time. ~~or for an indefinite period.~~

3. Board approval will apply only to those specific offerings certified by the sponsoring organization as having been conducted by instructors meeting the established criteria and in accordance with the board-approved courses, outlines, and objectives.

4. To maintain approval of the program, changes made to the program since initial approval must be submitted to the board for review and approval. Changes must be approved by the board prior to any training subsequent to the changes.

Department of Professional and Occupational Regulation

TO: VIRGINIA BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS
FROM: KELLEY SMITH, EXECUTIVE DIRECTOR
SUBJECT: HEARING AID SPECIALIST REGULATORY REVIEW
DATE: JUNE 1, 2023

At the June 21, 2023, meeting, the Board will need to approve a Notice of Intended Regulatory Action ("NOIRA") to initiate these regulatory changes. Please note that you will be voting on these specific changes.

The Board can initiate the NOIRA with a motion to "initiate a Notice of Intended Regulatory Action regarding regulatory reduction."

Project 7493 - NOIRA

Board For Hearing Aid Specialists And Opticians

General Regulatory Reduction Initiative- Hearing Aid Specialists

18VAC80-20-10. Definitions.

The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

"Audiologist" means any person who engages in the practice of audiology as defined by § 54.1-2600 of the Code of Virginia.

"Board" means Board for Hearing Aid Specialists and Opticians.

"Department" means Department of Professional and Occupational Regulation.

"Endorsement" means a method of obtaining a license by a person who is currently licensed in another state.

"Hearing Aid instrument"

"Hearing aid specialist" means a person who engages in the practice of fitting or dealing in hearing aids as defined by 54.1-1500. ~~or who advertises or displays a sign or represents himself as a person who practices the fitting or dealing in hearing aids.~~

"Licensed sponsor" means a licensed hearing aid specialist who is responsible for training one or more individuals holding a temporary permit.

"Licensee" means any person holding a valid license issued by the Board for Hearing Aid Specialists and Opticians for the practice of fitting or dealing in hearing aids, as defined in § 54.1-1500 of the Code of Virginia.

"Otolaryngologist" means a licensed physician specializing in ear, nose, and throat disorders.

~~"Reciprocity" means an agreement between two or more states to recognize and accept one another's regulations and laws.~~

"Reinstatement" means having a license restored to effectiveness after the expiration date has passed.

"Renewal" means continuing the effectiveness of a license for another period of time.

"Temporary permit holder" means any person who holds a valid temporary permit under this chapter.

18VAC80-20-20. Explanation of terms.

Each reference in this chapter to a person shall be deemed to refer, as appropriate, to the masculine and the feminine, to the singular and the plural, and to the natural persons and organizations.

18VAC80-20-30. Basic qualifications for licensure.

A. Every applicant for a license shall provide information on his application establishing that:

1. The applicant is at least 18 years of age.

2. The applicant has successfully completed high school or a high school equivalency course.

3. The applicant has training and experience that covers the following subjects as they pertain to hearing aid fitting and the sale of hearing aids, accessories, and services:

a. Basic physics of sound;

b. Basic maintenance and repair of hearing aids;

c. The anatomy and physiology of the ear;

~~d. Introduction to psychological aspects of hearing loss;~~

~~e~~d. The function of hearing aids and amplification;

~~f~~e. Visible disorders of the ear requiring medical referrals;

~~g~~f. Practical tests utilized for selection or modification of hearing aids;

~~h~~g. Audiometric testing including ~~P~~pure tone audiometry, ~~including~~ air conduction~~,~~ and bone conduction~~, and related tests~~; speech reception threshold testing and speech discrimination testing;

~~i. Live voice or recorded voice speech audiometry, including speech reception threshold testing and speech discrimination testing;~~

~~j~~h. Masking when indicated;

~~k~~i. Recording and evaluating audiograms and speech audiometry to determine the proper

selection and adaptation of hearing aids;

~~l~~j. Taking earmold impressions;

~~m~~k. Proper earmold selection;

~~n~~l. Adequate instruction in proper hearing aid orientation;

~~o~~m. Necessity of proper procedures in after-fitting checkup; and

~~p~~n. Availability of social service resources and other special resources for the hearing impaired.

4. The applicant has provided one of the following as verification of completion of training and experience as described in subdivision 3 of this subsection:

a. A statement on a form provided by the board signed by the licensed sponsor certifying that the requirements have been met; or

b. A certified true copy of a transcript of courses completed at an accredited college or university, or other notarized documentation of completion of the required experience and training.

5. ~~The applicant has not been convicted or found guilty of any crime directly related to the practice of fitting or dealing in hearing aids, regardless of the manner of adjudication, in any jurisdiction of the United States. Except for misdemeanor marijuana convictions and misdemeanor convictions that occurred five or more years prior to the date of application, with no subsequent convictions, all criminal convictions shall be considered as part of the totality of the circumstances of each applicant. The applicant review of prior convictions shall be subject to the requirements of § 54.1-204 of the Code of Virginia. Any plea of nolo contendere shall be considered a conviction for purposes of this subdivision. The record of a conviction authenticated in such form as to be admissible in evidence under the laws of the jurisdiction where convicted shall be admissible as prima facie evidence of such conviction or guilt.~~ In accordance with § 54.1-204 of the Code of Virginia, each applicant shall disclose the following information regarding criminal convictions in Virginia and all other jurisdictions:

a. All misdemeanor convictions that occurred three years or more where the applicant has a subsequent conviction involving sexual offense and physical injury; and

b. All felony convictions that occurred ten years or more without a subsequent conviction involving sexual offense, physical injury, drug distribution, or that directly related to the practice of fitting or dealing in hearing aids, regardless of the manner of adjudication, in any jurisdiction of the United States.

c. Any plea of nolo contendere shall be considered a conviction for purposes of this subdivision. The record of a conviction authenticated in such form as to be admissible in evidence under the laws of the jurisdiction where convicted shall be admissible as prima facie evidence of such conviction or guilt.

6. The applicant is in good standing as a licensed hearing aid specialist in every jurisdiction where licensed. The applicant must disclose if he has had a license as a hearing aid specialist that was suspended, revoked, or surrendered in connection with a disciplinary action or that has been the subject of discipline in any jurisdiction prior to applying for licensure in Virginia. At the time of application for licensure, the applicant must also disclose any disciplinary action taken in another jurisdiction in connection with the applicant's practice as a hearing aid specialist. The applicant must also disclose whether he has been previously licensed in Virginia as a hearing aid specialist.

7. The applicant has disclosed his physical address. A post office box is not acceptable.

8. The nonresident applicant for a license has filed and maintained with the department an irrevocable consent for the department to serve as service agent for all actions filed in any court in Virginia.

9. The applicant has submitted the required application with the proper fee as referenced in 18VAC80-20-70 and signed, as part of the application, a statement that the applicant has read and understands Chapter 15 (§ 54.1-1500 et seq.) of Title 54.1 of the Code of Virginia and this chapter.

B. The board may make further inquiries and investigations with respect to the qualifications of the applicant or require a personal interview or both. The board may refuse initial licensure due to the applicant's failure to comply with entry requirements. The licensee is entitled to a review of such action. Appeals from such actions shall be in accordance with the provisions of the Administrative Process Act, Chapter 40 (§ 2.2-4000 et seq.) of Title 2.2 of the Code of Virginia.

18VAC80-20-40. Temporary permit.

A. Any individual may apply for a temporary permit, which is to be used solely for the purpose of gaining the training and experience required to become a licensed hearing aid specialist in Virginia. The licensed sponsor shall be identified on the application for a temporary permit and the licensed sponsor shall comply

strictly with the provisions of subdivisions ~~B 1 and B 2~~ of this section.

1. A temporary permit shall be issued for a period of 12 months and may be extended once for not longer than six months. After a period of 18 months an extension is no longer possible and the former temporary permit holder shall sit for the examination in accordance with this section.

2. The board may, at its discretion, extend the temporary permit for a temporary permit holder who suffers serious personal illness or injury, or death in his immediate family, or obligation of military service or service in the Peace Corps, or for other good cause of similar magnitude approved by the board. Documentation of these circumstances must be received by the board no later than 12 months after the date of the expiration of the temporary permit or within six months of the completion of military or Peace Corps service, whichever is later.

~~B. Every applicant for a temporary permit shall provide information upon application establishing that:~~

~~1. The applicant for a temporary permit is at least 18 years of age.~~

~~2. The applicant for a temporary permit has successfully completed high school or a high school equivalency course.~~

~~3. The applicant has not been convicted or found guilty of any crime directly related to the practice of fitting or dealing in hearing aids, regardless of the manner of adjudication, in any jurisdiction of the United States. Except for misdemeanor marijuana convictions and misdemeanor convictions that occurred five or more years prior to the date of application, with no subsequent convictions, all criminal convictions shall be considered as part of the totality of the circumstances of each applicant. Review of prior convictions shall be subject to the requirements of § 54.1 204 of the Code of Virginia. Any plea of nolo contendere shall be considered a conviction for purposes of this subdivision. The record of a conviction authenticated in such form as to be admissible in evidence under the laws of the jurisdiction where convicted shall be admissible as prima facie evidence of such conviction or guilt.~~

~~4. The applicant for a temporary permit is in good standing as a licensed hearing aid specialist in every jurisdiction where licensed. The applicant for a temporary permit must disclose if he has had a license as a hearing aid specialist that was suspended, revoked, or surrendered in connection with a disciplinary action or that has been the subject of discipline in any jurisdiction prior to applying for licensure in Virginia. At the time of application, the applicant for a temporary permit must also disclose any disciplinary action taken in another jurisdiction in connection with the applicant's practice as a hearing aid specialist. The applicant for a temporary permit must also disclose whether he has been licensed previously in Virginia as a hearing aid specialist.~~

~~5. The applicant for a temporary permit has disclosed his physical address. A post office box is not acceptable.~~

~~6. The applicant for a temporary permit has submitted the required application with the proper fee referenced in 18VAC80-20-70 and has signed, as part of the application, a statement that the applicant has read and understands Chapter 15 (§ 54.1-1500 et seq.) of Title 54.1 of the Code of Virginia and this chapter.~~

B. A registered apprenticeship under the Department of Labor and Industry (DOLI) is held to be a board-approved temporary permit.

C. Audiologists are eligible for a three-year temporary permit for individuals enrolled in a post-secondary graduate program.

D. Every applicant for a temporary permit shall provide information upon application establishing that:

1. The applicant for a temporary permit is at least 18 years of age.

2. The applicant for a temporary permit has successfully completed high school or a high school equivalency course.

3. The applicant has not been convicted or found guilty of any crime directly related to the practice of fitting or dealing in hearing aids, regardless of the manner of adjudication, in any jurisdiction of the United States. Except for misdemeanor marijuana convictions and misdemeanor convictions that occurred five or more years prior to the date of application, with no subsequent convictions, all criminal convictions shall be considered as part of the totality of the circumstances of each applicant. Review of prior convictions shall be subject to the requirements of § 54.1-204 of the Code of Virginia. Any plea of nolo contendere shall be considered a conviction for purposes of this subdivision. The record of a conviction authenticated in such form as to be admissible in evidence under the laws of the jurisdiction where convicted shall be admissible as prima facie evidence of such conviction or guilt.

4. The applicant for a temporary permit is in good standing as a licensed hearing aid specialist in every jurisdiction where licensed. The applicant for a temporary permit must disclose if he has had a license as a hearing aid specialist that was suspended, revoked, or surrendered in connection with

a disciplinary action or that has been the subject of discipline in any jurisdiction prior to applying for licensure in Virginia. At the time of application, the applicant for a temporary permit must also disclose any disciplinary action taken in another jurisdiction in connection with the applicant's practice as a hearing aid specialist. The applicant for a temporary permit must also disclose whether he has been licensed previously in Virginia as a hearing aid specialist.

5. The applicant for a temporary permit has disclosed his physical address. A post office box is not acceptable.

6. The applicant for a temporary permit has submitted the required application with the proper fee referenced in 18VAC80-20-70 and has signed, as part of the application, a statement that the applicant has read and understands Chapter 15 (§ 54.1-1500 et seq.) of Title 54.1 of the Code of Virginia and this chapter.

~~C~~E. The licensed hearing aid specialist who agrees to sponsor the applicant for a temporary permit shall certify on the application that as sponsor, he:

1. Assumes full responsibility for the competence and proper conduct of the temporary permit holder with regard to all acts performed pursuant to the acquisition of training and experience in the fitting or dealing of hearing aids;

2. Will not assign the temporary permit holder to carry out independent field work without on-site direct supervision by the sponsor until the temporary permit holder is adequately trained for such activity;

3. Will personally provide and make available documentation, upon request by the board or its representative, showing the number of hours that direct supervision has occurred throughout the period of the temporary permit; and

4. Will return the temporary permit to the department should the training program be discontinued for any reason.

~~D~~F. The licensed sponsor shall provide training and shall ensure that the temporary permit holder under his supervision gains experience that covers the following subjects as they pertain to hearing aid fitting and the sale of hearing aids, accessories, and services:

1. Basic physics of sound;

2. Basic maintenance and repair of hearing aids;

3. The anatomy and physiology of the ear;

~~4. Introduction to psychological aspects of hearing loss;~~

~~5.~~4. The function of hearing aids and amplification;

~~6.~~5. Visible disorders of the ear requiring medical referrals;

~~7.~~6. Practical tests utilized for selection or modification of hearing aids;

~~8.~~7. Audiometric testing including ~~P~~pure tone audiometry, ~~including~~ air conduction, and bone conduction, ~~and related tests;~~speech reception threshold testing and speech discrimination testing;

~~9. Live voice or recorded voice speech audiometry, including speech reception threshold testing and speech discrimination testing;~~

~~10.~~8. Masking when indicated;

~~11.~~9. Recording and evaluating audiograms and speech audiometry to determine the proper selection and adaptation of hearing aids;

~~12.~~10. Taking earmold impressions;

~~13.~~11. Proper earmold selection;

~~14.~~12. Adequate instruction in proper hearing aid orientation;

~~15.~~13. Necessity of proper procedures in after-fitting checkup; and

~~16.~~14. Availability of social service resources and other special resources for the hearing impaired.

~~E~~G. The board may make further inquiries and investigations with respect to the qualifications of the applicant for a temporary permit or require a personal interview, or both.

~~F~~H. All correspondence from the board to the temporary permit holder not otherwise exempt from disclosure, shall be addressed to both the temporary permit holder and the licensed sponsor and shall be sent to the business address of the licensed sponsor.

18VAC80-20-50. Qualifications for licensure by ~~reciprocity~~ endorsement.

Every applicant for Virginia licensure through ~~reciprocity~~ endorsement who is currently licensed as a hearing aid specialist in good standing in another jurisdiction shall provide information upon application establishing that the requirements and standards under which the license was issued are substantially equivalent to and not conflicting with the provisions of this chapter. The applicant shall file the application

for ~~reciprocity~~ endorsement with, and pay a fee to, the board, and must successfully complete the specified sections of the examination.

Applicants that can demonstrate active engagement in the profession for the preceding five years shall only be required to take the rules and regulations portion of the exam.

18VAC80-20-80. Examinations.

A. All examinations required for licensure shall be approved by the board and administered by the board, a testing service acting on behalf of the board, or another governmental agency or organization.

B. The candidate for examination shall follow all rules established by the board with regard to conduct at the examination. Such rules shall include any written instructions communicated prior to the examination date and any instructions communicated at the site, either written or oral, on the date of the examination. Failure to comply with all rules established by the board with regard to conduct at the examination shall be grounds for denial of the application.

C. Applicants for licensure shall pass a ~~two-part examination, of which Part I is a written examination and Part II is a practical examination.~~ written examination, rules and regulations, and all portions of the practical exam.

1. The applicant shall pass each section of the written and practical examination administered by the board. Candidates failing one or more sections of the written or practical examination will be required to retake only those sections failed.

2. Any candidate failing to achieve a passing score on all sections in two years from the initial test date must reapply as a new applicant for licensure and repeat all sections of the ~~written and practical~~ examination.s.

3. If the temporary permit holder fails to achieve a passing score on any section of the examination in ~~three~~ four successive scheduled examinations, the temporary permit shall expire upon receipt of the examination failure letter resulting from the ~~third~~ fourth attempt.

18VAC80-20-90. License renewal required.

A. Licenses issued under this chapter shall expire ~~on December 31 of each even-numbered year as indicated on the license~~ two years from the effective date.

B. The board will mail or email a renewal notice to the licensee at the last known address. Failure to receive this notice shall not relieve the licensee of the obligation to renew. Prior to the expiration date shown on the license, each licensee desiring to renew his license must return to the board all required forms and the appropriate fee as outlined in 18VAC80-20-70 of this chapter.

C. Licensees shall be required to renew their license by submitting the proper fee made payable to the Treasurer of Virginia. Any licensee who fails to renew within 30 days after the license expires shall be required to apply for reinstatement.

D. The board may deny renewal of a license for the same reasons as it may refuse initial licensure as set forth in Part II or discipline a licensee as set forth in Part V of this chapter. The licensee is entitled to a review of such action. Appeals from such actions shall be in accordance with the provisions of the Administrative Process Act, Chapter 40 (§ 2.2-4000 et seq.) of Title 2.2 of the Code of Virginia.

E. Applicants for renewal of a license shall continue to meet the standards of entry as set forth in 18VAC80-20-30 A 5 through 18VAC80-20-30 A9.

18VAC80-20-100. ~~Procedures for renewal.~~ (Repealed.)

~~The board will mail a renewal application form to the licensee at the last known address. Failure to receive this notice shall not relieve the licensee of the obligation to renew. Prior to the expiration date shown on the license, each licensee desiring to renew his license must return to the board all required forms and the appropriate fee as outlined in 18VAC80-20-70 of this chapter.~~

18VAC80-20-110. ~~Fees for renewal.~~ (Repealed.)

~~Licensees shall be required to renew their license by submitting the proper fee made payable to the Treasurer of Virginia. Any licensee who fails to renew within 30 days after the license expires shall be~~

~~required to apply for reinstatement.~~

18VAC80-20-120. ~~Board discretion to deny renewal.~~ (Repealed.)

~~The board may deny renewal of a license for the same reasons as it may refuse initial licensure as set forth in Part II or discipline a licensee as set forth in Part V of this chapter. The licensee is entitled to a review of such action. Appeals from such actions shall be in accordance with the provisions of the Administrative Process Act, Chapter 40 (§ 2.2-4000 et seq.) of Title 2.2 of the Code of Virginia.~~

18VAC80-20-130. ~~Qualifications for renewal.~~ (Repealed.)

~~Applicants for renewal of a license shall continue to meet the standards of entry as set forth in 18VAC80-20-30 A 2, 18VAC80-20-30 A 3 and, 18VAC80-20-30 A 5 through 18VAC80-20-30 A 9.~~

18VAC80-20-140. Reinstatement required.

A. If a licensee fails to meet the requirements for renewal and submit the renewal fee within 30 days after the expiration date on the license, the licensee must apply for reinstatement on a form provided by the board.

1. Applicants for reinstatement shall continue to meet the standards of entry in ~~18VAC80-20-30 A 2, 18VAC80-20-30 A 3 and~~ 18VAC80-20-30 A 5 through 18VAC80-20-30 A 9.

2. Applicants for reinstatement shall submit the required fee referenced in 18VAC80-20-70.

3. Two years after the expiration date on the license, reinstatement is no longer possible. To resume practice as a hearing aid specialist, the former licensee must apply as a new applicant for licensure, meeting all educational, examination, and experience requirements as listed in the regulations current at the time of reapplication.

~~4. Any hearing aid specialist activity conducted subsequent to the expiration date of the license may constitute unlicensed activity and may be subject to prosecution by the Commonwealth under §§ 54.1-111 and 54.1-202 of the Code of Virginia.~~

B. The board may deny reinstatement of a license for the same reasons as it may refuse initial licensure or discipline a licensee. The licensee is entitled to a review of such action. Appeals from such actions shall be in accordance with the provisions of the Administrative Process Act, Chapter 40 (§ 2.2-4000 et seq.) of Title 2.2 of the Code of Virginia.

C. When a licensee is reinstated, the license shall continue to have the same license number and shall be assigned an expiration date two years from the previous expiration date of the license, which is the expiration date assigned to all licenses at the time the license is reinstated.

D. A licensee who reinstates his license shall be regarded as having been continually licensed without interruption. Therefore, the licensee shall remain under the disciplinary authority of the board during the entire period and may be held accountable for his activities during this period. Nothing in this chapter shall divest the board of its authority to discipline a licensee for a violation of the law or regulations during the period of licensure.

18VAC80-20-150. ~~Board discretion to deny reinstatement.~~ (Repealed.)

~~The board may deny reinstatement of a license for the same reasons as it may refuse initial licensure or discipline a licensee. The licensee is entitled to a review of such action. Appeals from such actions shall be in accordance with the provisions of the Administrative Process Act, Chapter 40 (§ 2.2-4000 et seq.) of Title 2.2 of the Code of Virginia.~~

18VAC80-20-160. ~~Status of license during the period prior to reinstatement.~~ (Repealed.)

~~A. When a licensee is reinstated, the license shall continue to have the same license number and shall be assigned an expiration date two years from the previous expiration date of the license, which is the expiration date assigned to all licenses at the time the license is reinstated.~~

~~B. A licensee who reinstates his license shall be regarded as having been continually licensed without interruption. Therefore, the licensee shall remain under the disciplinary authority of the board during the entire period and may be held accountable for his activities during this period. Nothing in this chapter shall divest the board of its authority to discipline a licensee for a violation of the law or regulations during the period of licensure.~~

18VAC80-20-210. ~~Measures to take when first contact is established with any purchaser or prospective purchaser.~~ (Repealed.)

~~A. When first contact is established with any purchaser or prospective purchaser outside the hearing aid specialist's principal place of business, the licensee shall provide a disclosure form prescribed by the board containing information that the purchaser or prospective purchaser will need to obtain service/maintenance. The disclosure form shall include:~~

~~1. Address and telephone number where the hearing aid specialist can be reached.~~

~~2. Days and hours contact can be made;~~

~~3. Whether service/maintenance will be provided in the office or in the home of the purchaser or prospective purchaser; and~~

~~4. If the hearing aid specialist has no principal place of business in Virginia, a clear statement that there is no principal place of business in Virginia.~~

~~B. When first contact is established with any purchaser or prospective purchaser the licensee shall:~~

~~1. Advise the purchaser or prospective purchaser that hearing aid specialists are not licensed to practice medicine; and~~

~~2. Advise the purchaser or prospective purchaser that no examination or representation made by the specialist should be regarded as a medical examination, opinion, or advice.~~

~~a. A statement that this initial advice was given to the purchaser or prospective purchaser shall be entered on the purchase agreement in print as large as the other printed matter on the receipt.~~

~~b. Exemption: Hearing aid specialists who are physicians licensed to practice medicine in Virginia are exempt from the requirements of this subsection.~~

18VAC80-20-220. Purchase agreement.

A. Each hearing aid shall be sold through a purchase agreement that shall:

1. Show the licensee's business address, license number, business telephone number, and signature;

2. Comply with federal and Virginia laws and regulations, U.S. Food and Drug Administration (FDA) regulations, the Virginia Home Solicitation Sales Act (Chapter 2.1 (§ 59.1-21.1 et seq.) of Title 59.1 of the Code of Virginia), and the Virginia Consumer Protection Act (Chapter 17 (§ 59.1-196 et seq.) of Title 59.1 of the Code of Virginia);

3. Clearly state, if the hearing aid is not new and is sold or rented, that it is "used" or "reconditioned," whichever is applicable, including the terms of warranty, if any~~.~~; ~~The hearing aid container shall be clearly marked with the same information contained in the purchase agreement;~~

4. Identify the brand names and model of the hearing aid being sold, and the serial number of the hearing aid shall be provided, in writing, to the purchaser ~~or prospective purchaser~~ at the time of delivery of the hearing aid;

5. Disclose the full purchase price;

6. Disclose the down payment and periodic payment terms in cases where the purchase price is not paid in full at delivery;

7. Disclose any nonrefundable fees established in accordance with § 54.1-1505 of the Code of Virginia. Nonrefundable fees shall not be a percentage of the purchase price of the hearing aid;

~~8. Disclose any warranty;~~

~~9~~8. Explain the provisions of § 54.1-1505 of the Code of Virginia, which entitles the purchaser to return the hearing aid, in 10-point bold face type that is bolder than the type in the remainder of the purchase agreement; and

~~10~~9. Disclose that the licensee or temporary permit holder is not a physician licensed to practice medicine in Virginia and that no examination or representation made shall be regarded as a medical examination, opinion or advice.

B. Subdivision A 10 of this section shall not apply to sales made by a licensed hearing aid specialist who is a physician licensed to practice medicine in Virginia.

18VAC80-20-230. Fitting or sale of hearing aids for children.

~~A. Any person engaging in the fitting or sale of hearing aids for a child under 18 years of age shall ascertain whether such child has been examined by an otolaryngologist or licensed physician within six months prior to fitting.~~

~~B~~A. No child under 18 years of age shall be initially fitted with a hearing aid or hearing aids unless the licensed hearing aid specialist has been presented with a written statement signed by an otolaryngologist stating the child's hearing loss has been medically evaluated and the child may be considered a candidate for a hearing aid. The medical evaluation must have taken place within the preceding six months.

~~C~~B. No child under 18 years of age shall be subsequently fitted with a hearing aid or hearing aids unless the licensed hearing aid specialist has been presented with a written statement signed by a licensed physician stating the child's hearing loss has been medically evaluated and the child may be considered a candidate for a hearing aid. The medical evaluation must have taken place within the preceding six months.

18VAC80-20-240. ~~Physician statement regarding adult client's medical evaluation of hearing loss.~~

(Repealed.)

~~A. Each licensee or holder of a temporary permit, in counseling and instructing adult clients and prospective adult clients related to the testing, fitting, and sale of hearing aids, shall be required to recommend that the client obtain a written statement signed by a licensed physician stating that the patient's hearing loss has been medically evaluated within the preceding six months and that the patient may be a candidate for a hearing aid.~~

~~B. Should the client decline the recommendation, a statement of such declination shall be obtained from the client over his signature. Medical waivers that are a part of purchase agreements shall be in a separate section, which shall be signed by the client indicating his understanding of the medical waiver. A separate, additional client signature space shall be provided in all purchase agreements for the client to sign acknowledging his understanding of the purchase terms and conditions established by 18VAC80-20-200.~~

~~1. Fully informed adult patients (18 years of age or older) may waive the medical evaluation.~~

~~2. The hearing aid specialist is prohibited from actively encouraging a prospective user to waive a medical examination.~~

~~C. The information provided in subsection A of this section must be made a part of the client's record kept by the hearing aid specialist.~~

18VAC80-20-250. Testing procedures.

It shall be the duty of each licensee and holder of a temporary permit engaged in the fitting and sale of hearing aids to use appropriate testing procedures for each hearing aid fitting. All tests and case history information must be retained in the records of the specialist. The established requirements shall be:

1. Air Conduction Tests are to be made on every client with A.N.S.I. standard frequencies of 500-1000-2000-4000-6000-8000 Hertz. Intermediate frequencies shall be tested if the threshold difference between octaves exceeds 15dB. Appropriate masking must be used if the difference between the two ears is 40 dB or more at any one frequency.

2. Bone Conduction Tests are to be made on every client ~~A.N.S.I.~~ with A.N.S.I. standards at 500-1000-2000-4000 Hertz. Proper masking is to be applied if the air conduction and bone conduction readings for the test ear at any one frequency differ by 15 dB or if lateralization occurs.

3. Speech testings shall be made before fittings and shall be recorded with the type of test, method of presentation, and the test results.

4. The specialist shall check for the following conditions and, if they are found to exist, shall refer the client to a licensed physician unless the client can show that his present condition is under treatment or has been treated:

a. Visible congenital or traumatic deformity of the ear.

b. History of active drainage from the ear within the previous 90 days.

c. History of sudden or rapidly progressive hearing loss within the previous 90 days.

d. Acute or chronic dizziness.

e. Unilateral hearing loss.

f. Audiometric air bone gap equal to or greater than 15 dB at 500 Hertz, 1000 Hertz, and 2000 Hertz.

g. Visible evidence or significant cerumen accumulation or a foreign body in the ear canal.

h. Tinnitus as a primary symptom.

i. Pain or discomfort in the ear.

5. All tests shall have been conducted no more than six months prior to the fitting.

6. Post-fitting testing shall be made and recorded with type of test, method of presentation and the test results.

18VAC80-20-270. Grounds for discipline.

The board may, in considering the totality of the circumstances, fine any temporary permit holder or licensee, and suspend, place on probation, or revoke, or refuse to renew any temporary permit or license or deny any application issued under the provisions of Chapter 15 (§ 54.1-1500 et seq.) of Title 54.1 of the Code of Virginia and this chapter. Disciplinary procedures are governed by the Administrative Process Act, Chapter 40 (§ 2.2-4000 et seq.) of Title 2.2 of the Code of Virginia. ~~In exercising its disciplinary function, the board will consider the totality of the circumstances of each case.~~ Any licensee is subject to board discipline for any of the following:

1. Improper conduct, including:

a. Obtaining, renewing, or attempting to obtain a license by false or fraudulent representation;

b. Obtaining any fee or making any sale by fraud or misrepresentation;

c. Employing to fit or sell hearing aids a person who does not hold a valid license or a temporary permit, or whose license or temporary permit is suspended;

d. Using, causing, or promoting the use of any misleading, deceptive, or untruthful advertising matter, promotional literature, testimonial, guarantee, warranty, label, brand, insignia, or any other representation, whether disseminated orally or published;

~~e. Advertising a particular model or type of hearing aid for sale when purchasers or prospective purchasers responding to the advertisement cannot purchase the advertised model or type;~~

~~f~~e. Representing that the service or advice of a person licensed to practice medicine or audiology will be used in the selection, fitting, adjustment, maintenance, or repair of hearing aids when that is not true, or using the words "physician," "audiologist," "clinic," "hearing service," "hearing center," or similar description of the services and products provided when such use is not accurate;

~~g~~f. Directly or indirectly giving or offering to give favors, paid referrals, or anything of value to any person who in his professional capacity uses his position to influence third parties to purchase products offered for sale by a hearing aid specialist; or

~~h~~g. Failing to provide expedient, reliable, or dependable services when requested by a client or client's guardian.

2. Failure to include on the purchase agreement a statement regarding home solicitation when required by federal and state law.

3. Incompetence or negligence, as those terms are generally understood in the profession, in fitting or selling hearing aids.

4. Failure to provide required or appropriate training resulting in incompetence or negligence, as those terms are generally understood in the profession, by a temporary permit holder under the licensee's sponsorship.

5. Violating or cooperating with others in violating any provisions of Chapters 1 (§ 54.1-100 et seq.), 2 (§ 54.1-200 et seq.), 3 (§ 54.1-300 et seq.), and 15 (§ 54.1-1500 et seq.) of Title 54.1 of the Code of Virginia or this chapter.

6. The licensee, temporary permit holder, or applicant has been convicted or found guilty of any crime directly related to the practice of fitting or dealing in hearing aids, regardless of the manner of adjudication, in any jurisdiction of the United States. Except for misdemeanor marijuana convictions and misdemeanor convictions that occurred ~~five~~ three or more years prior to the date of application, with no subsequent convictions involving sexual offense and physical injury, and all felony convictions that occurred ten years or more involving sexual offense, physical injury, or drug distribution. ~~a~~All criminal convictions without a subsequent conviction shall be considered as part of the totality of the circumstances of each applicant. Review of prior convictions shall be subject to the requirements of § 54.1-204 of the Code of Virginia. Any pleas of nolo contendere shall be considered a conviction for the purpose of this subdivision. The record of a conviction authenticated in such form as to be admissible in evidence of the law of the jurisdiction where convicted shall be admissible as prima facie evidence of such conviction or guilt.

Department of Professional and Occupational Regulation

TO: VIRGINIA BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS
FROM: KELLEY SMITH, EXECUTIVE DIRECTOR
SUBJECT: OPTICAL TRAINING INSTITUTE CURRICULUM
DATE: JUNE 6, 2023

The Board received a request from Optical Training Institute in November 2022 to have its curriculum approved as related technical instruction for the Virginia Department of Labor and Industry registered apprenticeship program. The Curriculum Review Committee met on February 27, 2023 and March 30, 2023 to review this curriculum. The Committee is recommending that the Board approve this curriculum as related technical instruction. Attached you will find a copy of the curriculum. Please come to the meeting prepared to discuss any concerns about the curriculum.

If the Board would like to approve this curriculum as related technical instruction you may do so with a motion to approve Optical Training Institute's curriculum as related technical instruction.

March 16, 2023

Board for Hearing Aid Specialists and Opticians
Department of Professional and Occupational Regulation
9960 Mayland Drive
Suite 200
Richmond, Virginia 23230

Dear Sir/Madam,

I, Brian Diener, the Director of Optical Training Institute, am writing this letter of attestation to certify that our Optician Development Program meets all the required curriculum, content, and education hours promulgated by the Virginia Department of Professional and Occupational Regulation's Board for Hearing Aid Specialists and Opticians.

The Optician Development Program is designed to meet all the necessary educational standards, including the required hours of instruction, as mandated by the Board and the State of Virginia. We have ensured that our curriculum and content are up-to-date and reflect the most current developments in the field of Opticianry.

I am aware that any misrepresentation of facts contained in this attestation may subject me to the penalty of perjury, and as such, I solemnly affirm that the information provided in this letter is true and accurate to the best of my knowledge.

Thank you for considering this attestation, and please let us know if there are any further steps we need to take to ensure our program's compliance with the Board for Hearing Aid Specialists and Opticians requirements.

Sincerely,

Brian Diener
Director of Optical Training Institute

Optician Development Program Resources

1. *A Text-book OF Physiology For Medical Students and Physicians* by William H. Howell, Ph.D., M. D., Sc. D., LL.D. Professor of Physiology in The Johns Hopkins University, Baltimore Sixth Edition, Revised Philadelphia and London, W. B. Saunders Company 1916 Copyright, 1905, by W. B. Saunders and Company. Reprinted February, 1906, September, 1906, and January, 1907. Revised, reprinted, and re-copyrighted August: 190 Chapter XVII. — *The Eye as an Optical Instrument: Dioptrics of the Eye*

2. Alonso, José, et al. *Modern Ophthalmic Optics*. Cambridge University Press, 2019.

3. Alvarez, Tara L., et al. "Adaptation to Progressive Lenses by Presbyopes." *2009 4th International IEEE/EMBS Conference on Neural Engineering*, 2009, pp. 143–146., https://doi.org/10.1109/ner.2009.5109255.

4. Anshel, Jeffrey. *Smart Medicine for Your Eyes: A Guide to Safe and Effective Relief of Common Eye Disorders*. Suare Ones Pub., 2011.

5. Asimov, Isaac. *Understanding Physics*. Barnes & Noble Publishing, 1988.

6. Benjamin, William J., and Irvin M. Borish. *Borish's Clinical Refraction*. 2nd ed., Butterworth-Heinemann Elsevier, 2006.

7. Bennett, Edward S., and Barry A. Weissman. *Clinical Contact Lens Practice*. Lippincott Williams & Wilkins, 2004.

8. Bennett, Edward S., and Milton M. Hom. *Manual of Gas Permeable Contact Lenses*. 2nd ed., Butterworth-Heinemann Elsevier, 2004.

9. Bennett, Edward S., and Vinita Allee Henry. *Clinical Manual of Contact Lenses*. 5th ed., Wolters Kluwer, 2019.

10. Berg, Adam S. "Blue Light Know-How." *Invision*, 4 Sept. 2015.

11. "Blinking Exercises for Dry Eye." *Lakeline Vision Source*, EyeCarePro, 22 Dec. 2021, https://www.lakelinevision.com/blinking-exercises/

12. Boyd, Kierstan. "Ophthalmology Subspecialists." Edited by Kevin J McKinney, *American Academy of Ophthalmology*, American Academy of Ophthalmology, 24 Feb. 2023, https://www.aao.org/eye-health/tips-prevention/ophthalmology-subspecialists.

13. Brooks, Clifford W. *Essentials of Ophthalmic Lens Finishing*. 2nd ed., Butterworth-Heinemann Elsevier, 2003.

14. Brooks, Clifford W. *Professional Dispensing for Opticianry*. 2nd ed., Butterworth-Heinemann Elsevier, 1996.

15. Brooks, Clifford W. *Understanding Lens Surfacing*. Butterworth-Heinemann Elsevier, 1991.

16. Brooks, Clifford W., and Irvin M. Borish. *System for Ophthalmic Dispensing*. 3rd ed., Butterworth-Heinemann Elsevier, 2006.

17. Burkett, Nelson D. *Family Eye Care Guide*. Lochland Press, 1990.

18. Casper, Daniel S., and George A. Cioffi. *The Columbia Guide to Basic Elements of Eye Care: A Manual for Healthcare Professionals*. Springer International Publishing, 2019.

19. Cassel, Gary H. *The Eye Book: A Complete Guide to Eye Disorders and Health*. 2nd ed., Johns Hopkins University Press, 2021.

20. Cassel, Gary H., et al. *The Eye Book: A Complete Guide to Eye Disorders and Health*. Johns Hopkins University Press, 1998.

21. Churchill, Jennifer, and Dan T. Gudgel. "What Is an Ophthalmologist?" Edited by Kendra Denise DeAngelis, *American Academy of Ophthalmology*, American Academy of Ophthalmology, 8 Dec. 2022, https://www.aao.org/eye-health/tips-prevention/what-is-ophthalmologist.

22. Collins, James F. *Your Eyes: An Owner's Guide*. Prentice-Hall, 1995.

23. "Community Options for Safe Needle Disposal." *EPA*, United States Environmental Protection Agency, 31 July 2022, https://www.epa.gov/rcra/community-options-safe-needle-disposal.

24. Davies, Juanita J. *Illustrated Guide to Medical Terminology*. 2nd ed., Cengage Learning, 2015.

25. DiGirolamo, Joseph. *The Big Book of Family Eye Care: A Contemporary Reference for Vision and Eye Health*. Basic Health Publications, 2011.

26. "Disposal of Protected Health Information." *HHS.gov*, U.S. Department of Health and Human Services, https://www.hhs.gov/hipaa/for-professionals/faq/disposal-of-protected-health-information/index.html.

27. Drummond, D C, and A G Skidmore. "Sterilization and disinfection in the physician's office." *CMAJ : Canadian Medical Association Journal*, vol. 145,8 (1991): 937-43.

28. Education, Naval. *Basic Optics and Optical Instruments*. Dover Publications, 2011.

29. Elliot, James. *Key to the Complete Treatise on Practical Geometry and Mensuration: Containing Full Demonstrations of the Rules*. Nabu Press, 1845; 2011.

30. Evans, Bruce, et al. *Clinical Optics and Refraction: A Guide for Optometrists, Contact Lens Opticians, and Dispensing Opticians*. Elsevier Limited, 2007.

31. "Eye Safety Injury and Illness Data." *The National Institute for Occupational Safety and Health (NIOSH)*, Centers for Disease Control and Prevention, 29 July 2013, https://www.cdc.gov/niosh/topics/eye/injuryillness.html.

32. Gervasio, Kalla A., and Travis J. Peck. *The Wills Eye Manual: Office and Emergency Room Diagnosis and Treatment of Eye Disease*. 8th ed., Wolters Kluwer, 2021.

33. "Glaucoma Research Foundation." *Learn About Glaucoma*, Glaucoma Research Foundation, https://glaucoma.org/.

34. Goes, Frank Joseph, and J.J. De Laey. *The Eye in History*. 1st ed., Jaypee Brothers Medical Publishers (P) Ltd., 2013.

35. Goldberg, Stephen, and Bill Trattler. *Ophthalmology Made Ridiculously Simple*. 5th ed., MedMaster, Inc., 2019.

36. Gross, Kim Johnson, et al. *Eyeglasses (Chic Simple): Face to Face*. Knopf, 1994.

37. Helveston, Eugene M. "Understanding, detecting, and managing strabismus." Community eye health vol. 23,72 (2010): 12-4.

38. Hubel, David H. *Eye, Brain, and Vision*. Scientific American Library, 1988.

39. Jalie, Mo. *Ophthalmic Lenses and Dispensing*. 3rd ed., Butterworth Heinemann Elsevier, 2008.

40. Johnson, Benjamin King. *Optics and Optical Instruments: An Introduction* . 3rd ed., Dover Publications, Inc., 2011.

41. Karam, Andrew P., and Ben P. Stein. *Light and Sound (Science Foundations)*. Chelsea House Pub, 2010.

42. Karpecki, Paul M. "High Energy Visible Light Risks Part Two." *Professional Eye Care Associates of America*, Innexus, 13 Feb. 2019, https://portal.pecaa.com/2014/08/11/high-energy-visible-light-risks-part-two/.

43. "Keep an Eye on Your Vision Health." *Vision Health Initiative (VHI)*, Centers for Disease Control and Prevention, 1 Oct. 2020, https://www.cdc.gov/visionhealth/resources/features/keep-eye-on-vision-health.html.

44. Keshavarz Hedayati, Mehdi, and Mady Elbahri. "Antireflective Coatings: Conventional Stacking Layers and Ultrathin Plasmonic Metasurfaces, A Mini-Review." *Materials*, vol. 9, no. 6, 21 June 2016, https://doi.org/10.3390/ma9060497.

45. Ledford, Janice K. *Certified Ophthalmic Assistant Exam Review Manual*. 2nd ed., Slack Incorporated, 2003.

46. Malton, Thomas. *A Royal Road to Geometry: Or, an Easy and Familiar Introduction to the Mathematics*. Palala Press, 2016.

47. Matula, Richard A. "Effects of Visual Display Units on the Eyes: A Bibliography (1972-1980)." *Human Factors: The Journal of the Human Factors and Ergonomics Society*, vol. 23, no. 5, 1981, pp. 581–586., https://doi.org/10.1177/001872088102300507.

48. Maxwell, Jessica. *The Eye Body Connection*. Warner Books Inc, 1982.

49. McCleary, David S. *The Optician Training Manual: Simple Steps to Becoming a Great Optician*. 2nd ed., Santa Rosa Publishing, 2018.

50. McLeary, David. *The Exceptional Optician - Systems for Creating Lifelong, Enthusiastic, and Profitable Customers*. 2012.

51. Megerian, Anoosh, et al. *Optical Dispensing Handbook: A Custom Textbook*. Pearson Publishing, 2009.

52. Menke, Anne M. "Record Retention and Destruction." *Business and Management*, American Academy of Ophthalmology, 16 Aug. 2018, https://www.aao.org/young-ophthalmologists/yo-info/article/record-retention-destruction.

53. Milder, Benjamin, and Melvin L. Rubin. *The Fine Art of Prescribing Glasses: Without Making a Spectacle of Yourself*. Medicine Writing Association; Triad Publishing Company, 1991; 2004.

54. Millodot, Michel. *Dictionary of Optometry and Vision Science*. Elsevier, 2019.

55. Morgan, Sarah. *The Complete Optometric Assistant*, Butterworth Heinemann Elsevier, 2008.

56. *National Eye Institute*, U.S. Department of Health and Human Services, https://www.nei.nih.gov/.

57. *National Opticianry Competency Exam Secrets Study Guide*. Mometrix Media LLC, 2013.

58. *Ophthalmics - Prescription Ophthalmic Lenses - Recommendations*. ANSI Z80.1-2020, The Vision Council, 2015.

59. "Ophthalmology." *FREIDA*, American Medical Association, https://freida.ama-assn.org/specialty/ophthalmology.

60. *Optek International*, Intuitos, LLC, https://www.optekinternational.com/.

61. Pau, Hans, et al. *Differential Diagnosis of Eye Diseases*. Thieme Medical, 1988.

62. Remington, Lee Ann. *Clinical Anatomy and Physiology of the Visual System*. 3rd ed., Butterworth-Heinemann, Elsevier, 2012.

63. Segrave, Kerry. *Vision AIDS in America: A Social History of Eyewear and Sight Correction Since 1900*. McFarland & Company, 2014.

64. Shinde, Lakshmi, et al. "Covid-19 Guidelines for Optometry and Optical Services Post-Lockdown." *Indian Journal of Ophthalmology*, vol. 68, no. 8, 24 July 2020, pp. 1533–1539., https://doi.org/10.4103/ijo.ijo_1827_20.

65. Shukla, Aaron V. *Clinical Optics Primer for Ophthalmic Medical Personnel: A Guide to Laws, Formulae, Calculations, and Clinical Applications*. SLACK Incorporated, 2009.

66. Sim, Peng Yong. "History of Ophthalmology." *EyeWiki*, American Academy of Ophthalmology, 9 Feb. 2021, https://eyewiki.aao.org/History_of_Ophthalmology#Modern_Era_.28AD_1800_to_Present.29.

67. Smith, Yolanda. "Ophthalmology." Edited by Liji Thomas, *News Medical Life Sciences*, AZo Network, 2 Jan. 2023, https://www.news-medical.net/health/Ophthalmology.aspx.

68. Stein, Harold A. and Stein, Raymond M., *Ophthalmic Dictionary and Vocabulary Builder for Eye Care Professionals*, 4th ed., Jaypee Brothers Medical Publishers, 2012.

69. Stein, Harold A., et al. *Fitting Guide for Rigid and Soft Contact Lenses: A Practical Approach*. 4th ed., Mosby, 2002.

70. Stein, Harold A., et al. *Ophthalmic Terminology: Speller and Vocabulary Builder*. 2nd ed., Mosby, 1987.

71. Stein, Harold A., et al. *The Ophthalmic Assistant: A Text for Allied and Associated Ophthalmic Personnel*. 11th ed., Elsevier, 2021.

72. Stein, Harold A., et al. *The Ophthalmic Assistant: Fundamentals and Clinical Practice*. 5th ed., Mosby, 1988.

73. Stimson, Russell L. *Ophthalmic Dispensing*. 3rd ed., Charles C Thomas Pub Ltd, 1979.

74. Stoner, Ellen D., et al. *Optical Formulas Tutorial*. 2nd ed., Butterworth-Heinemann Elsevier, 2005.

75. Sulley, Anna, et al. "Clinical Evaluation of Fitting Toric Soft Contact Lenses to Current Non-Users." *Ophthalmic and Physiological Optics*, vol. 33, no. 2, 13 Feb. 2013, pp. 94–103., https://doi.org/10.1111/opo.12028.

76. Sulley, Anna, et al. "Factors in the Success of New Contact Lens Wearers." *Contact Lens and Anterior Eye*, vol. 40, 2017, pp. 15–24., https://doi.org/https://doi.org/10.1016/j.clae.2016.10.002.

77. Tarrant, Susan. "Rx Sunwear Tip Sheet." *Eyecare Business*, 1 Jan. 2018, pp. 74–75.

78. *The Optical Journal and Review of Optometry*. Optical Publishing Company, 1922.

79. Thomson, David W. "Eye Problems and Visual Display Terminals- The Facts and the Fallacies." *Ophthalmic and Physiological Optics*, vol. 18, no. 2, Mar. 1998, pp. 111–119., https://doi.org/10.1016/s0275-5408(97)00067-7.

80. "Top Causes of Eye Problems." Edited by Whitney Seltman, *WebMD*, WebMD, 16 Sept. 2022, https://www.webmd.com/eye-health/common-eye-problems.

81. Tunnacliffe, A H, and J G Hirst. *Optics*. ABDO College Diploma, Association of British Opticians, 2004.

82. Vagge, Aldo et al. "Blue light filtering ophthalmic lenses: A systematic review." *Seminars in Ophthalmology* vol. 36,7 (2021): 541-548. doi:10.1080/08820538.2021.1900283

83. White, Eric. "Capture the Sale." *Eyecare Business*, 1 Oct. 2021, pp. 42–43.

84. Wilkins, A. J. (1995). Visual stress. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780198521747.001.0001

85. Wooten, Davey M. *Optical Training: Skills and Procedures*. Butterworth-Heinemann Elsevier, 2003.

86. Wyszecki, Gunther, and W.S. Stiles. *Color Science: Concepts and Methods, Quantitative Data and Formulae*. 2nd ed., Wiley-Interscience, 2000.

Optical Training INSTITUTE

Optician Development Program

Program Overview

Submission to the Commonwealth of Virginia
November 18, 2022

Cover Letter

Hello,

My name is Brian Diener and I serve as a Director at Optical Training Institute. I'm writing to share this Program Overview, which describes our new Optician Development Program, and seek your approval of the program as a Board-approved Related Technical Instruction curriculum for the optician apprenticeship in the Commonwealth of Virginia.

About Optical Training Institute

Optical Training Institute was founded over 30 years ago and has provided high quality educational courses (primarily exam preparation and continuing education courses) to over 20,000 opticians and optometrists across the United States, including many in Virginia. Our mission is to support lifelong career learning for eye care professionals.

We pride ourselves on providing high quality courses written by subject matter experts and guided by experienced instructional designers. All of our continuing education courses are approved by ABO, NCLE, COPE, and/or relevant state boards. Our educational courses are informed by the latest research and our students' pass rates on ABO and NCLE exams well exceed national averages. None of our courses are sponsored by advertisers or vendors, which ensures an unbiased, academically rigorous approach to content development.

Optician Development Program

In response to requests from our community of eye care professionals, we recently developed the Optician Development Program ("ODP"). The program is a full-scope educational program designed to take a brand-new optician and guide them through a quick-start bootcamp program covering the basics, then progressively teach them more intensive spectacle, contact lens, and related concepts aligning with ABO, NCLE, and state licensure standards. Upon completion of the program, the student will be prepared to pass the ABO and NCLE examinations and continue in a successful career as an optician.

While developing the program, we identified the need for a modern education program developed with the latest technologies designed to fit the needs of working apprentices. With pedagogy designed by our Instructional Designer, Dr. Ann Kearney, we combined our expertise in optical content with the latest instructional design and educational research. The result is an effective and engaging educational program designed to complement an optician's apprenticeship through an asynchronous, self-study (guided by Sponsor) model.

The Optician Development Program consists of:

- 3 sections (each a "course"): Bootcamp, Spectacle, and Contact Lens
- 20 modules including a total of 71 different lessons throughout the program
- 39 instructional videos, demonstration videos filmed in an optical practice with a finishing lab, and 3D animations
- 78 quizzes

- 50+ self-efficacy elements designed to boost motivation and engagement
- Sponsor support materials and guidelines
- Flash cards, test banks and other additional study aids

The course is backed by our team, which offers daily support and dedicated office hours to supplement Sponsor training and guidance. The program includes two years of content designed to complement the student's apprenticeship and work experience. Ambitious students who self-direct an accelerated course of study may be able to finish more quickly.

Upon launching the program, following Virginia approval, the program will be available on computers as well as smart phones and tablets. It will also be available in a printed textbook. The program will be initially priced at $900 per student, which offers an incredible value compared to other educational programs available to opticians.

Reviewing the Program

We desire to support you, your team, the board, and any other relevant stakeholders in reviewing the program as we seek approval in the Commonwealth of Virginia.

To that end, the materials that follow in this Program Overview include the following:

- Program description
- Sample multimedia content
- A preview of the digital platform
- White paper on the program's learning pedagogy
- Biographies of the authors, editors, and instructional designer
- Sample lesson
- Detailed course outline
- A checklist comparing the ODP to Virginia program guidelines

While reviewing this Program Overview, if there are any additional materials that would be helpful to you, please let me know. We have a strong desire to help however possible.

We look forward to your feedback and working with you to offer our program in the Commonwealth of Virginia. Please reach out to us with any questions.

Thank you!

Best regards,

Brian Diener
Director, Optical Training Institute

Program Overview

Table of Contents

Program Overview

Course Descriptions

Bootcamp

This is a quick-start course designed to provide an initial foundation to get a new optician up to speed quickly or provide a helpful refresher for experienced opticians.

The Bootcamp serves as a 7-module survey of the optical field and the expectations of an optician's role. The course begins with an overview of customer service and an introduction to the various eye care professions. Basic optical principles are covered including ocular anatomy with a discussion of refractive errors and their impact. Prescription interpretation and how to decipher the eyewear needs of a patient are presented. The course proceeds with fundamentals on frames and lenses, including the styles, designs, and materials. Common lens treatments are discussed, and the course provides a foundation for understanding how frames, lenses, and treatments impact the final eyewear product and how selection and recommendation is crucial. The course proceeds with a survey of dispensing standards and procedures, regulations and standards, and an introduction to contact lenses. The final portion of the course provides step-by-step instructions on assisting a patient through the sale of eyeglasses from the selection to the dispensing process.

The course consists of 7 modules, and a total of 30 lessons. There are a variety of quizzes, totaling 135 questions for the student to track their progress and retain information.

Spectacle

The Spectacle course curriculum begins with a survey of the optical field, including the history and the various eye care professions. The ocular anatomy, physiology and pathology are covered, along with a thorough discussion of the concepts and principles of the field. This includes topics such as the optical cross, refraction, and prism. The course continues with presenting frame and lens information, including various designs, styles, materials, and properties. Optical instrumentation is discussed, which includes a survey of the components, functions, and use of a lensometer, corneal reflex pupilometer, and lens tracer and edger, among other key instruments. The standards and regulations are also covered with an emphasis on the agencies, tolerances, and rules pertaining to an optician. The course concludes with discussions of eyewear handling, selling, and management skills. Topics such as troubleshooting, inventory, and office flow are discussed.

The course consists of 7 modules, and a total of 22 lessons. There are a variety of quizzes, totaling 315 questions for the student to track their progress and retain information.

In addition to serving as a standalone course preparing opticians for a successful career, this course is designed to help prepare for the National Opticianry Competency Exam administered by the American Board of Opticianry ("ABO") and examinations for state licensure.

Contact Lens

The Contact Lens course curriculum begins with an introduction to contact lenses including historical developments and the designs and various materials of contact lenses. The ocular anatomy, physiology and pathology are reviewed along with a thorough discussion of the potential adverse effects of contact lenses. The main contact lens concepts and principles are surveyed. This includes topics such as transposition review, vertex distance, the lacrimal lens, and calculating the power of a lens. The course continues with instrumentation as well as modification and verification practices. Discussions include a survey of the components, functions, and use of a keratometer, slit lamp, digital corneal topographer, and radiuscope. Fitting methods for soft and rigid lenses are presented as well as the architecture, inspection and verification of each. Descriptions of the in-office modifications that are possible with rigid lenses are provided. Dispensing and follow-up procedures are covered beginning with fitting techniques and assessment. Other topics include insertion and removal techniques, wearing schedules, follow-up visits, lens care and cleaning, and patient education. The course concludes with discussions of the standards and regulations of the field with an emphasis on the agencies, tolerances, and rules pertaining to a contact lens fitter.

The Contact Lens course consists of 6 modules, and a total of 19 lessons. There are a variety of quizzes, totaling 295 questions for the student to track their progress and retain information.

In addition to serving as a standalone course preparing opticians for a successful career, this course is designed to help prepare for the Contact Lens Registry Exam administered by the NCLE and examinations for state licensure.

Interactive Content

Throughout each course, the program includes a variety of interactive content to keep the student engaged and motivated. Content includes illustrations, 3D animations, instructional videos, challenge videos, reviews of difficult concepts, and quiz question rationales. ABO and NCLE exam preparation and test-taking tips are covered as well. All interactive content is strategically placed to motivate the student and build excitement for future coursework and a successful career as a certified and/or licensed optician.

Content Format

All ODP students will receive access to the online version of the program, which is accessible on all device types: desktop, tablet, and smart phone. The cloud-based learning management system ("LMS" or "learning portal") is interactive and hosts rich multimedia content and a variety of study aids.

Students will also be able to receive printed versions of the course materials for an additional fee.

Sponsorship

Role of a Sponsor

Each student in the program will be required to have a Sponsor who monitors and supports the student's learning process. The Sponsor will be a mentor and tutor who helps explain challenging concepts, proctors final examinations, and attests to the student's skillful clinical practice.

Qualifications of a Sponsor

To be eligible to serve as a Sponsor, each Sponsor must:

1. Have regular interaction with the student and monitor their work product and clinical practice
2. Be licensed and actively working as an optician, optometrist, or ophthalmologist in the same state as the student
3. Commit to being a mentor and coach to the student, providing both substantive learning and development support and motivation throughout the program
4. Complete our Sponsor 101 course

Eligibility Requirements

At the time of registration, each student must have:

1. Earned a high school diploma, GED or a foreign equivalent
2. Active employment or pursuing a career in an optical field
3. A Sponsor who meets the Sponsor qualification requirements (if pursuing licensure)

Graduation Requirements

To graduate from the Optician Development Program, each student is required to complete the following requirements:

- Complete the program: Attest to completing the ODP curriculum
- Final exam: Pass a final examination for each course (Bootcamp, Spectacle, Contact Lens)
- Clinical skills: Demonstrate proven clinical skills on-the-job as attested by the Sponsor

Program Length

The course is designed to include two years of content on a part-time, self-study basis.

Because some students desire to accelerate their learning and pursue a more intensive course of study, no minimum frame is set.

In order to graduate, students must attest to completion of all course lessons. Such attestation will be validated through OTI's visibility into course completion through its online learning portal and through an attestation of the Sponsor.

Final Examinations

Students must also complete final examinations for each of the three sections of the program: Bootcamp, Spectacle, and Contact Lens. The examination must be proctored and will include multiple choice questions assessing the student's mastery of core concepts and learning objectives.

To pass each examination, students must achieve a score of 70% or higher on each examination. The Spectacle and Contact Lens examinations must each be completed within 120 minutes. Testing is available online or in a printed test format.

Proven Clinical Skills

As a key requirement of the Optician Development Program, the student must demonstrate mastery of clinical skills in an on-the-job environment. Clinical competency will be reviewed and approved in an attestation by the student's Sponsor.

Cost and Affordability

Cost

Initial pricing for the Optician Development Program will be $900 per student. The program will include access to:

- All online learning materials, including:
  - Lessons
  - Interactive content
  - Illustrations
  - 3D animations
  - Instructional videos
  - Quizzes
  - Final examinations
- All study aids, including:
  - Flash cards
  - Study guides
  - Test question banks
  - Full practice tests
  - Tips for test-taking
  - Sponsor support materials

Affordability

To support affordability, the Optician Development Program can be financed through Optical Training Institute's financing partners.

Students should discuss with their employers whether they subsidize the cost of the program.

Accommodation for Students with Learning Disabilities

The learning pedagogy central to the design of the Optician Development Program incorporates features that benefit all students, including those with learning disabilities. In particular, the modular, progression learning, self-paced, online or book-format course enables students to:

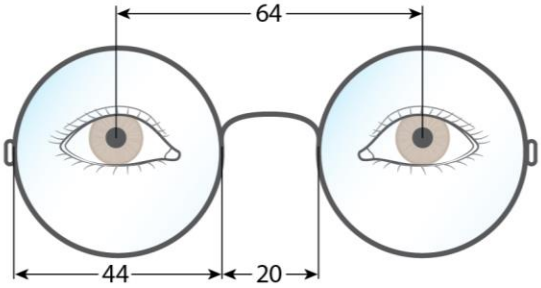
- Review text in large print
- Use text-to-speech software
- Take breaks
- Design an ideal, personalized learning environment (e.g., limited distractions, private room, special lighting)
- Schedule testing on a preferred day of week and/or at a time of day

For students with documented learning disabilities, Optical Training Institute may be able to provide additional accommodation such as breaks during and/or extended allotted time for final examinations.

Multimedia Preview

Illustrations

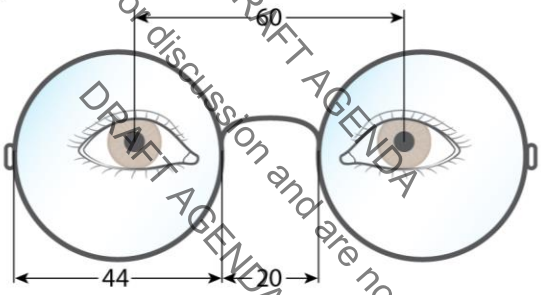
Example A



PD = 64 Rx = -1.00 sphere OU

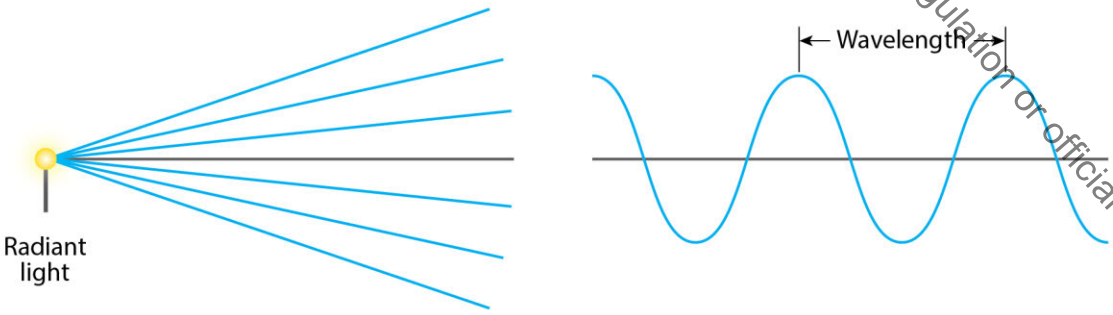
In this case the optical center of the lens is in the same position as the geometric center of each eyewire. No decentration necessary.

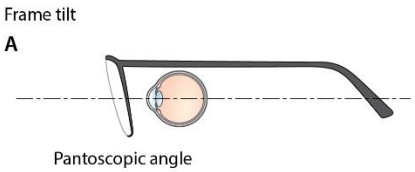
Example B

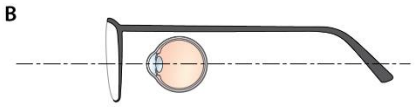


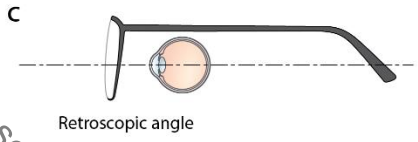
PD = 64 Rx = -1.00 sphere OU

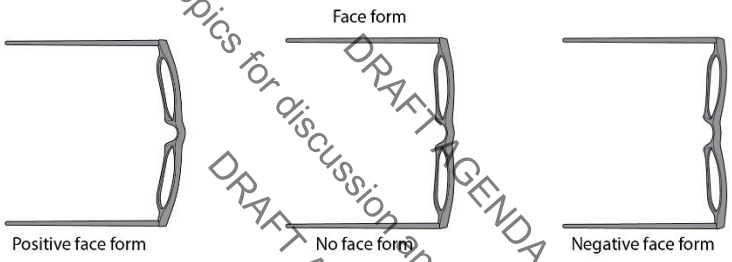
Since the GCD is 4mm wider than the PD, the lenses must be decentered 2mm in each eye. This will position the MRPs to properly correspond with the pupillary distance.

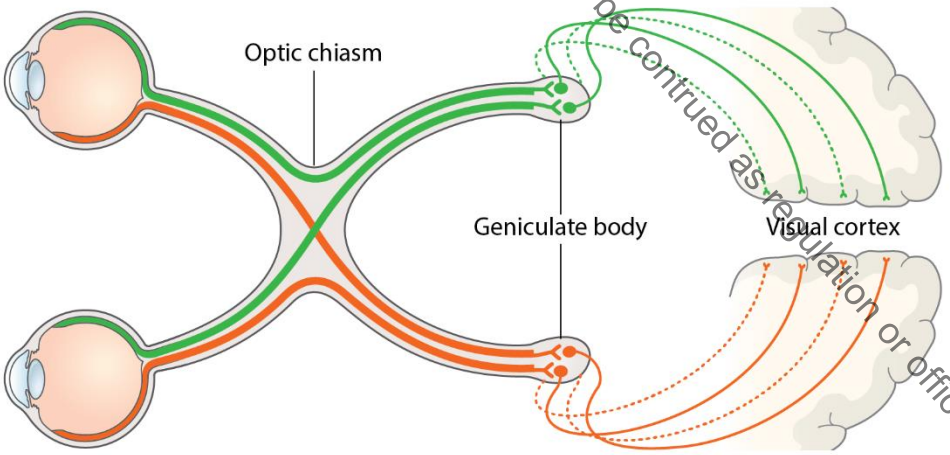


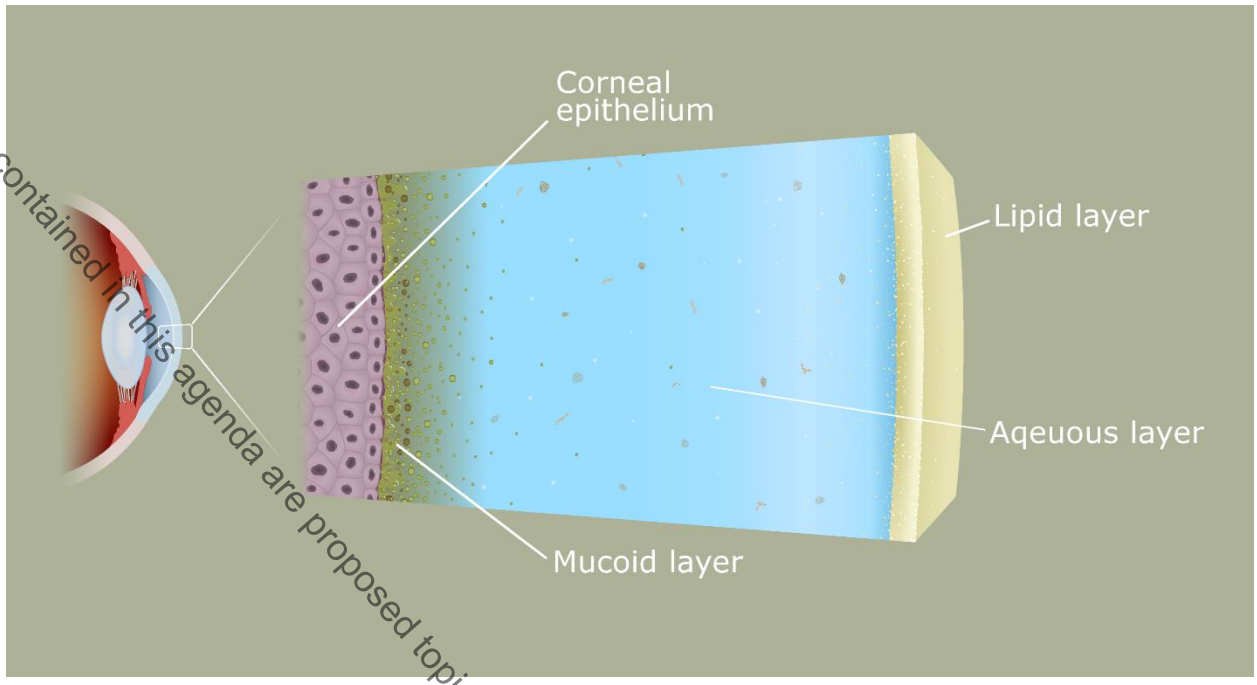


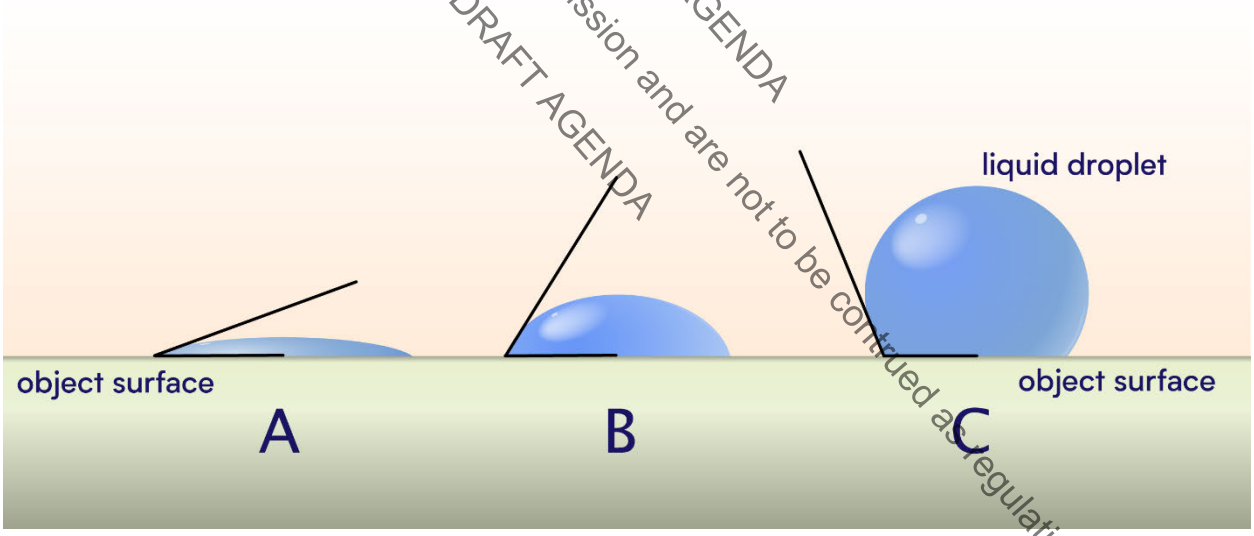


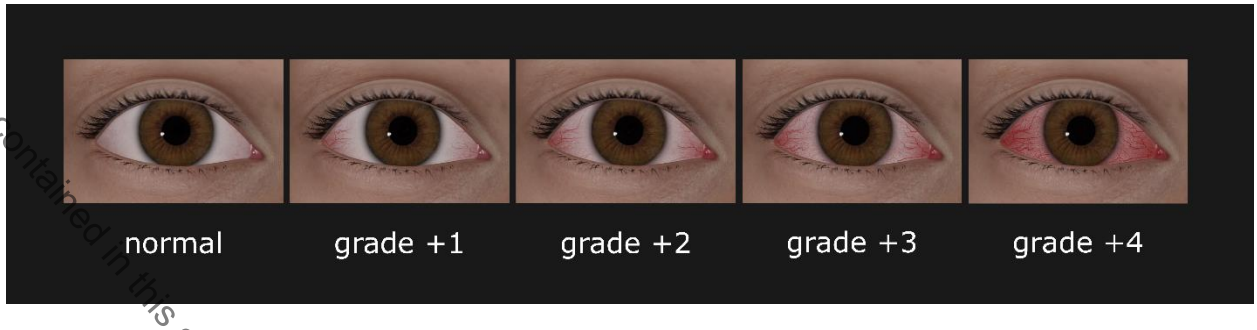




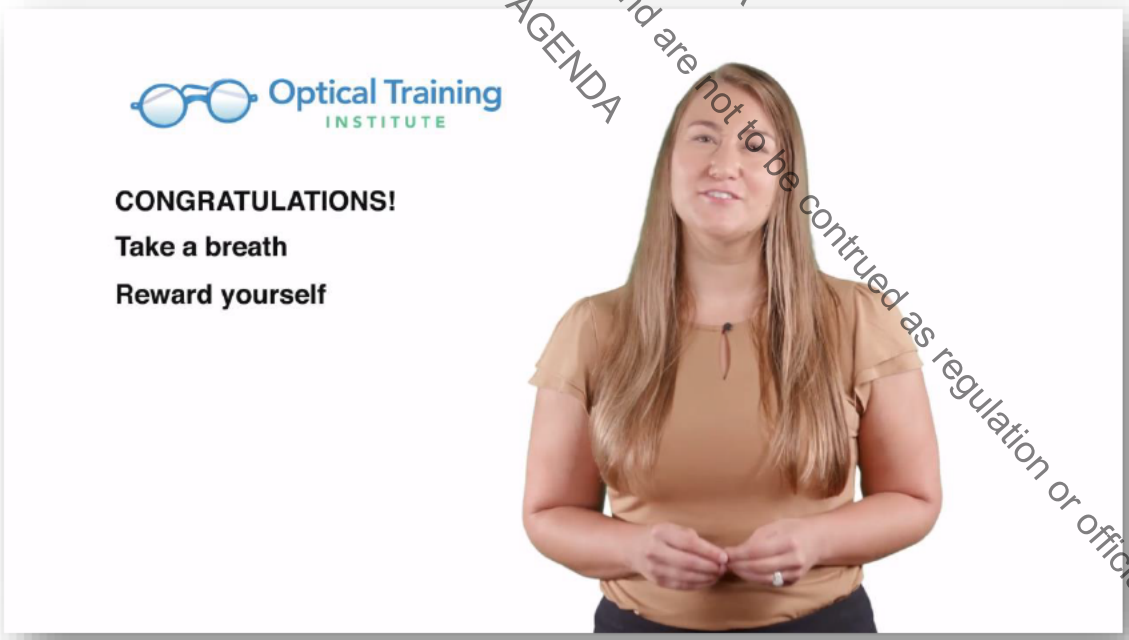




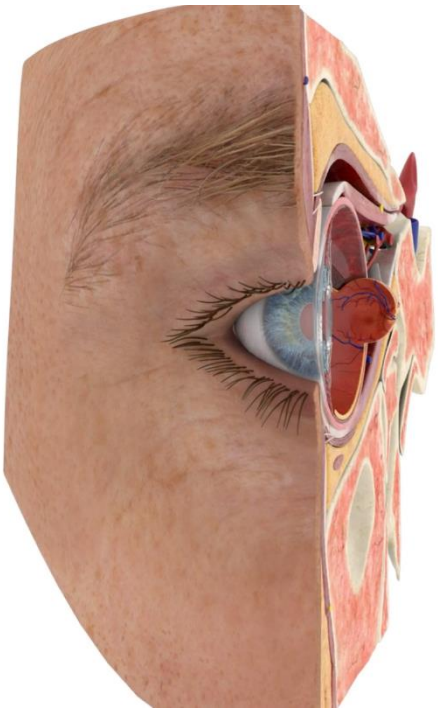


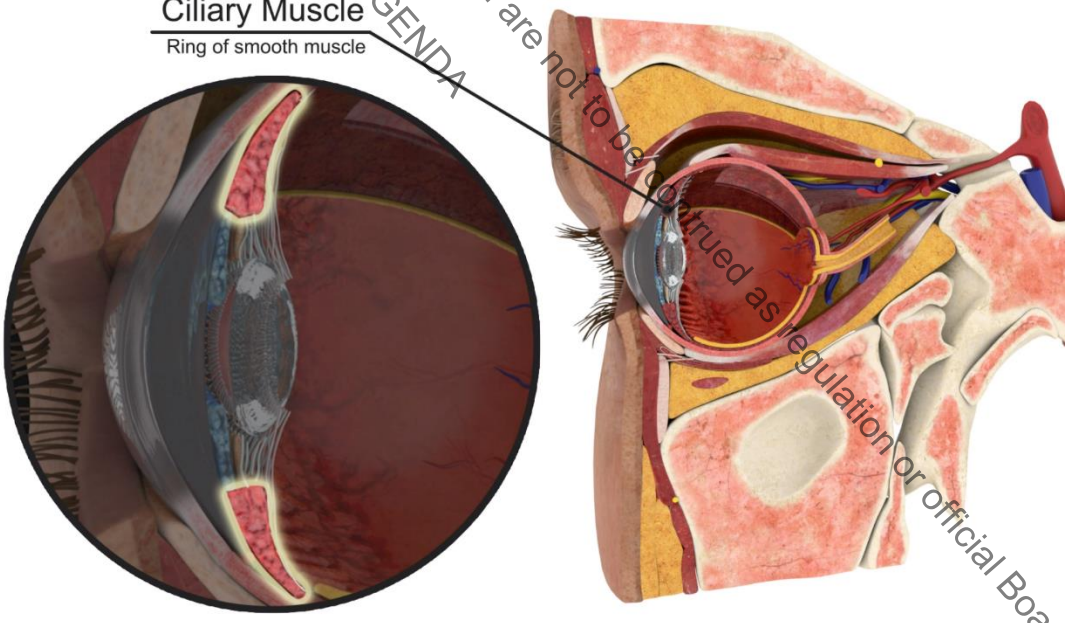


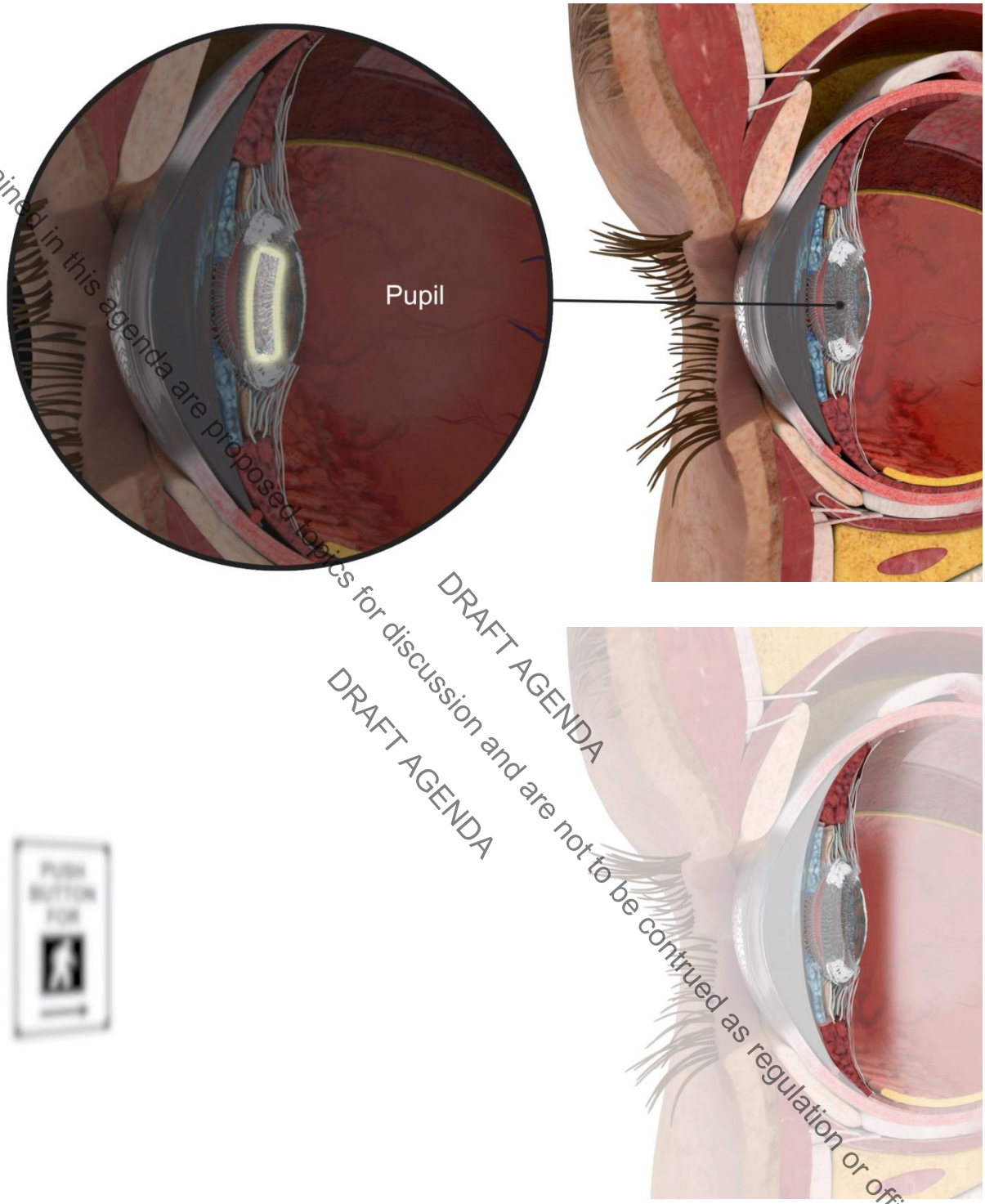
Videos – Instruction



Videos – 3D Animation







The narrated, 3D animated video describes key anatomical structures of the eye and shows how movement in the eye occurs as the eye focuses on an object.

[3D Animated Video: Accommodation (Click to Watch)]

Learning Portal

Overview

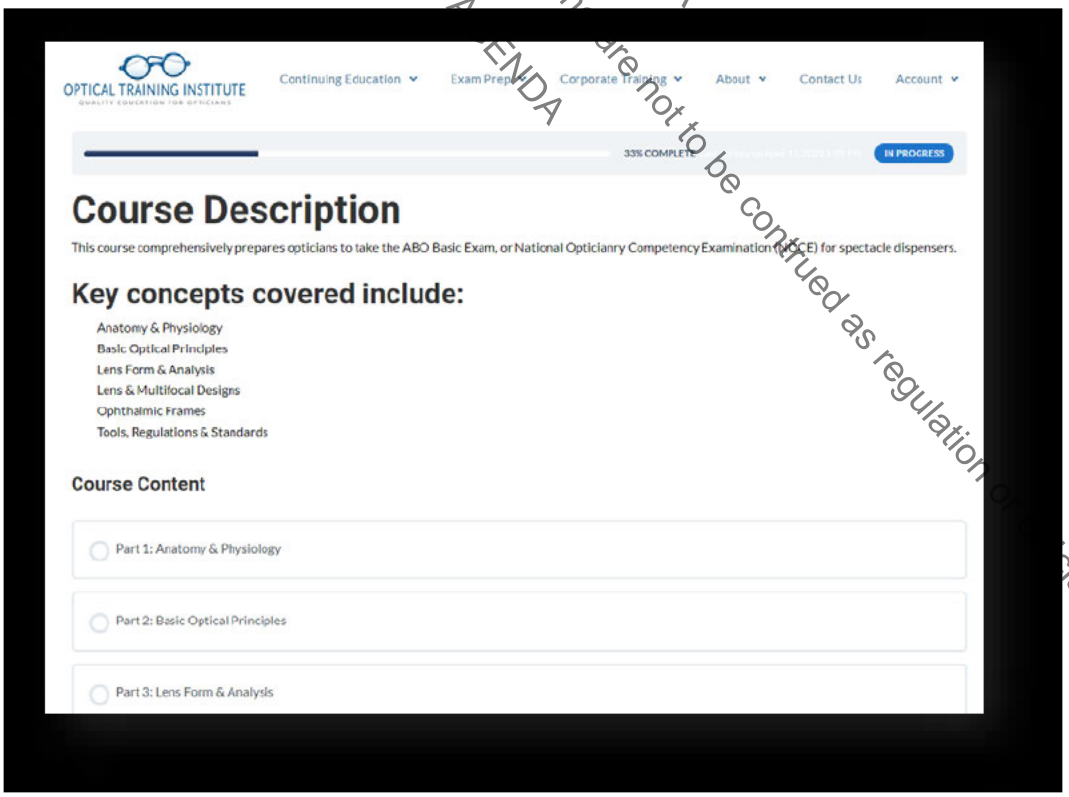
Innovative Technology: The Optician Development Program is built on an industry leading cloud-based learning management system (LMS). The LMS (aka "learning portal") provides a customized learning environment for students.

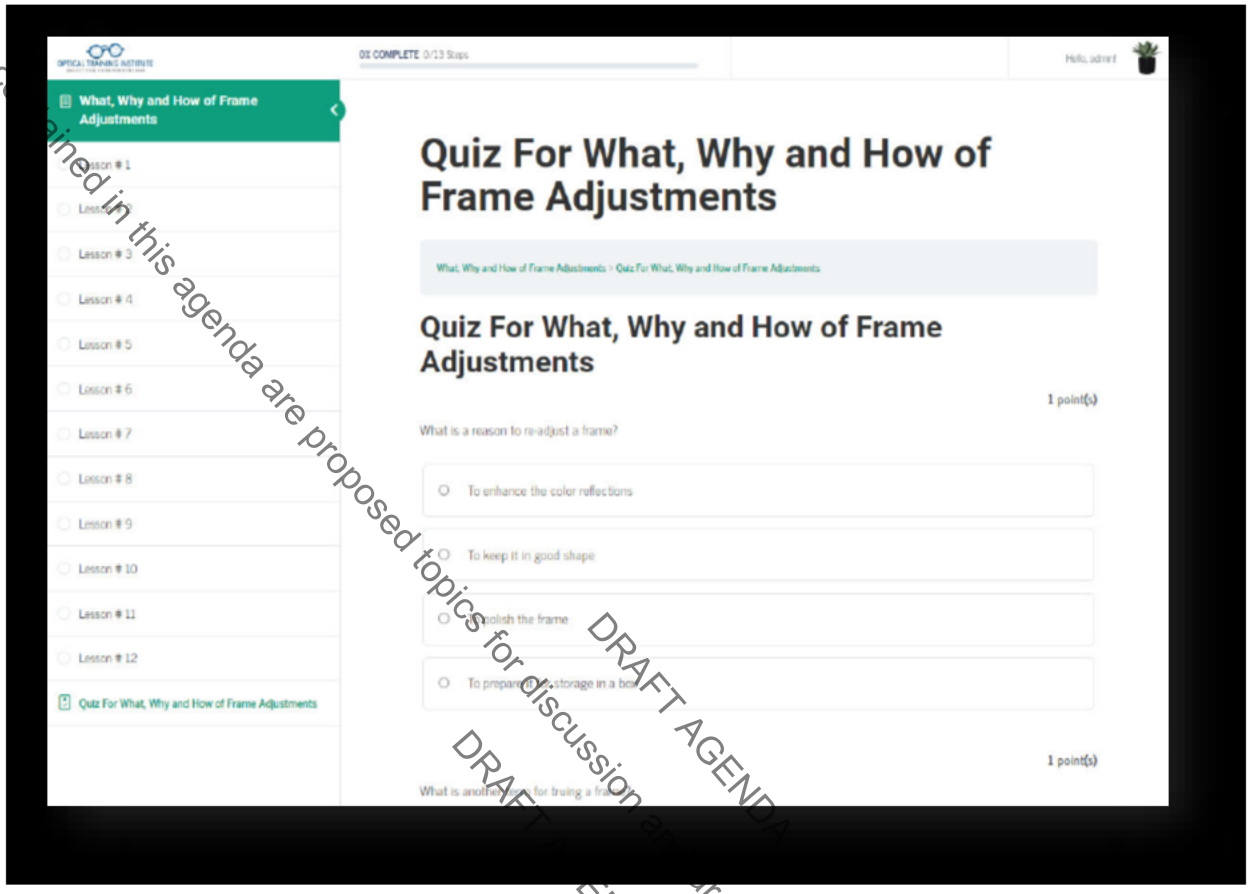
Accessible Content: The learning portal improves accessibility for students who often prefer to learn in both bite-sized sprints on mobile phones or tablets as well as longer sessions on laptops or desktop computers. With the ODP learning portal, students can access content and learn in any of these modalities. Students can login on any device to review content, track progress, view media files, take quizzes and request support; all from one easy to use digital platform.

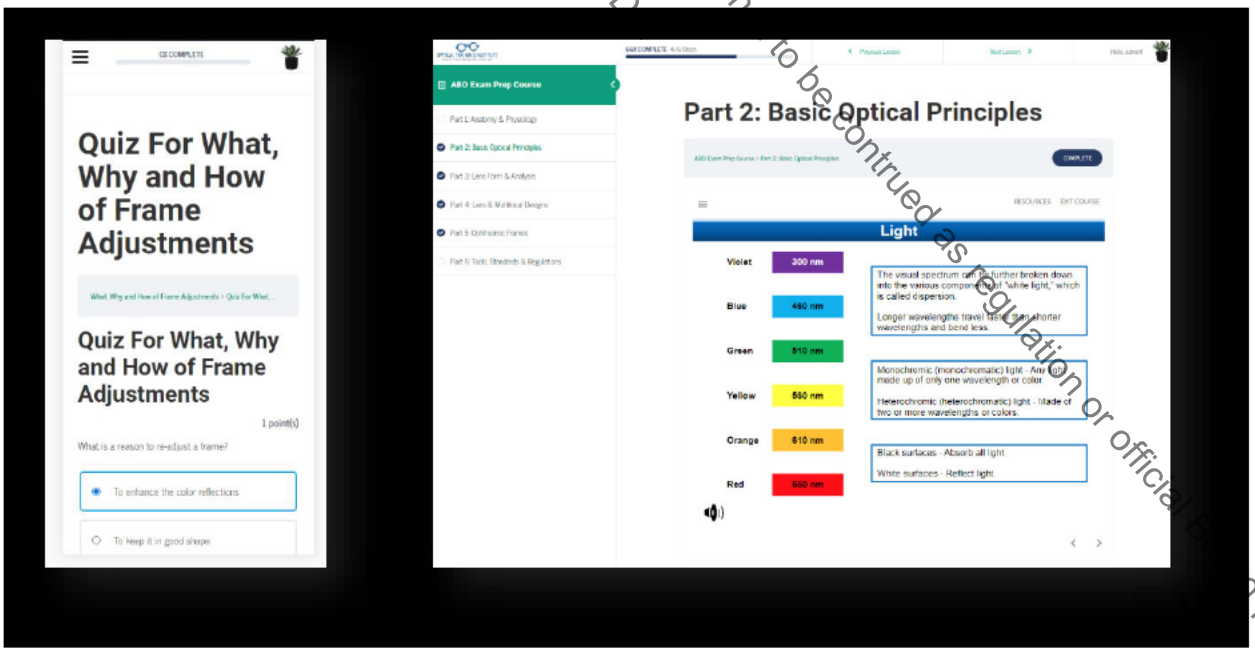
Enables Supplementary Tutoring: The learning portal provides sponsors / mentors and the OTI team visibility into each student's performance. Sponsors and the OTI team can also track a student's progress and run reports to identify where students may need additional support.

Dynamic Platform: The platform can also be updated as standards and regulations change and customized for specific state requirements.

Preview of the Portal







White Paper: ODP's Learning Pedagogy

Optician Development Program, a one-of-a-kind learning pedagogy rooted in the academic literature on self-efficacy

By Dr. Ann "Annie" Kearney, Instructional Designer, Optical Training Institute

Importance of Student-Centered Pedagogy

To ensure every student has the best chance of success in an educational program, the curriculum must combine (i) content from subject matter experts with a depth of industry experience and (ii) a robust learning pedagogy aligned to the needs and challenges of a typical student.

When designing the Optician Development Program, the team at Optical Training Institute took just this approach by combining the expertise of its industry expert opticians, optometrists, and optician educators with an innovative learning pedagogy.

The result is a world-class curriculum rooted in the literature of self-efficacy.

Challenges of Various Learning Environments

A self-study learning environment will look different for all individuals. On the whole, these environments are attractive to and beneficial for students. They allow a student to proceed at their own pace. Students can learn in their own environment and at a time of day that accommodates their work schedule. These programs also improve affordability, and the return-on-investment students garner from completing such programs.

While beneficial, there are some challenges associated with self-study learning environments. When programs are rigorous and self-directed, students sometimes start with enthusiasm but succumb to a lack of motivation to finish. Self-study programs can be difficult to navigate, such that students experience information overload. Remote learning can also be a challenge when the student does not receive feedback and cannot have questions answered as they learn new material.

To mitigate these challenges and boost every student's chance of success in the Optician Development Program, Optical Training Institute prioritized the concept of self-efficacy.

Why is Self-Efficacy Significant?

Self-efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments (Bandura, 1977, 1986, 1997).

It is a strong predictor of academic performance and learning (Aurah, 2013; Bartimote-Aufflick, Bridgeman, Walker, Sharma & Smith, 2015). It has also been positively correlated to student retention (Devonport & Lane, 2006; Street, 2010).

Self-efficacy will ultimately impact a student's goal attainment, as summarized findings in the journal article by Padilla Rodriguez & Armellini (2017):

1. It has been found that students with a high level of self-efficacy are confident in their own skills for success, self-motivate, regulate their learning, require minimal guidance, persist in the face of difficulties and tend to have high goal achievement (Bandura, 2002; Komarraju & Nadler, 2013; Wäschle, Allgaier, Lachner, Fink & Nückles, 2014).

2. On the other hand, students with a low level of self-efficacy are insecure about their ability for success, report believing that intelligence is unchangeable, are vulnerable to procrastination and tend to have deficient academic results (Bandura, 2002; Komarraju & Nadler, 2013; Wäschle, Allgaier, Lachner, Fink & Nückles, 2014).

Boosting Student Motivation and Engagement through Self-Efficacy

Given this understanding of the literature that makes clear the importance of self-efficacy, OTI knew that it needed to develop a program that would enable ODP students to reach their highest potential: maintaining motivation and ultimately completing the entire three-course program and pass all relevant licensing exams.

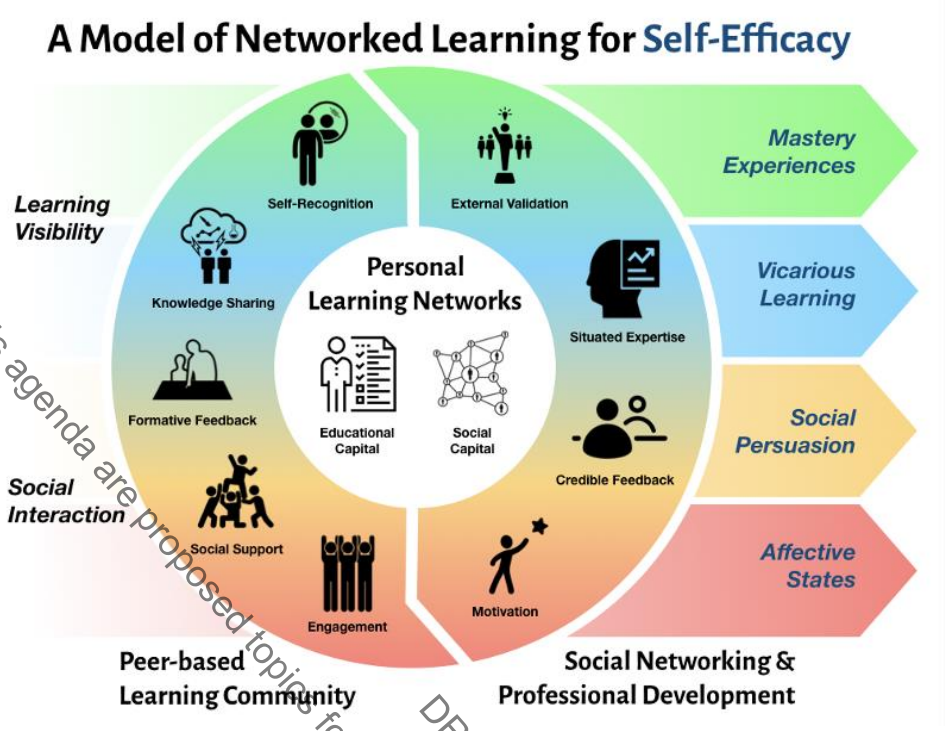
To ensure the program incorporated the practices identified in the literature as boosting self-efficacy, we completed a literature review of effective learning strategies.

In their review of 64 articles, Bartimote-Aufflick et al. (2015) identified strategies to promote students' self-efficacy, such as facilitating opportunities to work with peers, helping learners identify their own misconceptions, capitalizing on the affordances of technology, including multimedia, providing additional resources and activities for challenging concepts, and encouraging students to share their own personal experiences (Padilla Rodriguez & Armellini, 2017).

The e-tivity framework promotes active and participative online learning (Salmon, 2002). The framework as summarized in Padilla Rodriguez & Armellini (2017), includes three key elements:

- 'Spark' – a resource, such as an image or a video, aimed at generating interest in the topic of the activity
- Learning objective – contributing to the achievement of the lesson's overall learning outcome
- Task – with specific and clear instructions of what was expected from the learners
- Response – requiring participants to reflect and comment on others' contributions

And finally, the literature of Anders (2018) focused on the development of a model of networked learning for self-efficacy:



Anders, A. D. (2018). Networked learning with professionals boosts students' self-efficacy for social networking and professional development. Computers & Education, 127(December), 13–29.

Incorporating Self-Efficacy into ODP

Using the expertise of OTI's subject matter experts and the extensive literature review on self-efficacy and e-learning, we developed numerous strategies that would be intertwined throughout the curriculum.

Each course includes introduction videos, reviews of challenging concepts, mini quizzes, progression quizzes, demonstration videos, hype-motivational videos, module quizzes and longer quizzes formatted to licensure standards. And finally, we also focus on test taking skills and the promotion of the assets of the career. All of which promotes both educational and social capital.

Having a "face" of OTI throughout the program, Brianna, one of OTI's subject matter experts, is the face of reviewing challenging concepts – either in the form of quizzes or a simple review; providing hype-motivational videos, some of which focus specifically on goal settings and, finally, providing formative feedback on quizzes. As their coach and cheerleader, Brianna promotes self-recognition, social persuasion, and external validation.

The creation of progression quizzes – quizzes specifically created to refresh on previous concepts and terminology that would be seen in the upcoming course modules – boosts

retention of knowledge and mastery of skills, including ones covered multiple lessons prior in the course.

The ODP includes modern, high-quality videos, illustrations, and animations and is web-based, promoting broad accessibility. Demonstration videos also focus on practice and situated expertise.

The program is straightforward to understand and easier to complete on a self-directed basis than if it were designed without these self-efficacy principles. It is interactive and rewarding. It appeals to different learning styles. It incorporates a multitude of practice opportunities and reviews, including questions provided in numerous formats for different learning styles and quizzes formatted to the actual licensure exams.

Optical Training Institute also provides office hours and the ability for a student to ask questions and get quick responses from experts, which boosts engagement and adds a human touch beyond the student's Sponsor. Finally, all students in the program will be able to join the Optical Training Institute community, which will facilitate long-term career capital.

Results: Students Prepared for a Successful Optician Career

Optical Training Institute created the Optician Development Program after requests from the eye care community. Both opticians and leading employers sought a modern and high-quality optician education program created by subject matter experts with engaging content that would effectively prepare students for a successful career as an optician.

By thoughtfully designing the curriculum to be rooted in the literature of self-efficacy, Optical Training Institute's Optician Development Program does just that.

Citations

Anders, A. D. (2018). Networked learning with professionals boosts students' self-efficacy for social networking and professional development. Computers & Education, 127(December), 13–29.

Aurah, C. (2013). The Effects of Self-efficacy Beliefs and Metacognition on Academic Performance: A Mixed Method Study. American Journal of Educational Research, 1(8), 334–343. https://doi.org/10.12691/education-1-8-11

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84(2), 191-215.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.). Encyclopedia of human behavior (Vol. 4, pp. 71–81). New York: Academic Press.

Bandura, A. (1997). Self-Efficacy: The exercise of control. New York, NY: W. H. Freeman.

Bartimote-Aufflick, B., Bridgeman, A., Walker, R., Sharma, M., & Smith, L. (2015). The study, evaluation, and improvement of university student self-efficacy. Studies in Higher Education, 41(11), 1918–1942. http://dx.doi.org/10.1080/03075079.2014.999319

Devonport, T. J., & Lane, A. M. (2006). Relationships between self-efficacy, coping and student retention. Social Behavior and Personality, 34(2), 127–138. https://doi.org/10.2224/sbp.2006.34.2.127

Komarraju, M. & Nadler, D. (2013). Self-efficacy and academic achievement: Why do implicit beliefs, goals, and effort regulation matter? Learning and Individual Differences, 25, 67–72. http://dx.doi.org/10.1016/j.lindif.2013.01.005

Padilla Rodriguez, B. C., & Armellini, A. (2017). Developing self-efficacy through a massive open online course on study skills. Open Praxis, 9(3), 335. https://doi.org/10.5944/openpraxis.9.3.659

Salmon, G. (2002). E-tivities: the key to active online learning. Sterling, VA: Stylus Publishing Inc.

Street, H. (2010). Factors Influencing a Learner's Decision to Drop-Out or Persist in Higher Educa- tion Distance Learning. Online Journal of Distance Learning Administration, 13(4). Retrieved from http://www.westga.edu/~distance/ojdla/winter134/street134.html

Wäschle, K., Allgaier, A., Lachner, A., Fink, S., & Nückles, M. (2014). Procrastination and self-efficacy: Tracing vicious and virtuous circles in self-regulated learning. Learning and Instruction, 29, 103–114. http://dx.doi.org/10.1016/j.learninstruc.2013.09.005

Meet the Team

Instructional Designer

Dr. Ann "Annie" Kearney, Ed.D., M.S.W.

Dr. Kearney serves as Optical Training Institute's Instructional Designer. As the Instructional Designer, she has created a one-of-a-kind pedagogy for the Optician Development Program curriculum that is based on the tenets of self-efficacy. While developing the pedagogy, Dr. Kearney was deeply engaged with OTI's team of instructors and subject matter experts, extensively reviewed the current literature on self-efficacy, professional education, and relevant frameworks, and guided the structuring of the program.

In addition to serving as Instructional Designer for the Optician Development Program, she serves as the Director of Wellness at an independent school in New England.

Prior to joining OTI and her recent role as a Director of Wellness, Dr. Kearney spent worked as an independent researcher and writer. While her research expertise is primarily qualitative, she has had quantitative engagements. Her writing and consulting focus on curriculum and course design projects.

Throughout her career, Dr. Kearney has had extensive instructional design and educational experiences. She has a master's in clinical social work and a doctorate in health education, promotion and behavioral change from Columbia University. She has also served as a lecturer at numerous universities.

Authors

Debbi Bennett

Debbi Bennett is an Optical Sciences Instructor at Optical Training Institute. As an Instructor, her responsibilities include researching, writing and editing courses; providing customer service, outreach and personal guidance to the optical professionals studying the OTI coursework; rendering insight on current optical industry trends and standards; conducting specialized optical research and providing personal guidance to opticians studying the OTI materials.

Prior to joining Optical Training Institute in 2014, Debbi was the Optical Sciences Director at the American Career College, working in many capacities with this esteemed adult vocational college for 15 years. In this role, she advanced from instructor to lead instructor, and was promoted to Program Director for one of the California campuses. Additionally, Debbi co-wrote American Career College's Optical Dispensing Manual. As a trusted expert in this Allied Health field for over 20 years, Debbi continues her work as an optical sciences author, lecturer and instructor in her current role at Optical Training Institute.

Prior to her leadership at the American Career College, Debbi successfully served as an active dispenser, contact lens fitter, office manager, test preparation tutor, test question reviewer, and corporate health division liaison.

Debbi holds a diploma in Optical Dispensing from the American Career College by which she was named Valedictorian. She has attained ABO and NCLE-Advanced certification by the American Board of Opticianry and the National Contact Lens Examiners.

Debbi is an ABO-NCLE ophthalmic speaker approved by both national boards to conduct ABO-NCLE approved courses for the issuance of continuing education credits. Additionally, her professional credentials have included licensing in the State of California and an educational authorization from the American Bureau of Health Education Schools (ABHES). Debbi has received awards from both ABHES and Elsevier Publishing.

Brianna Cuenca

Brianna Cuenca is a Marketing and Operations Associate at Optical Training Institute. She is responsible for assisting growing opticians with their educational needs; managing the daily operations including sales and inventory management, customer inquiries, and overseeing course development; and helping the development team on innovative projects.

Prior to joining Optical Training Institute, Brianna was the Optical Manager of a small boutique at a privately-owned ophthalmologist office. She used her marketing and customer relations abilities to expand the customer base and increase sales and profitability considerably. While working as the Optical Manager, Brianna was responsible for hiring and training employees in their opticianry skills and she continued to coach them to enhance their performance.

Brianna's previous experiences also include providing superior service as a dispensing optician in several practices as well as a Store Support Specialist at a premier optical laboratory. These roles provided her with a well-rounded background that continues to be reflected in her position at Optical Training Institute.

Brianna holds an Associate's in Arts and Science degree from the University of Wisconsin – Fox Valley. She has attained ABO and NCLE certification from the American Board of Opticianry and the National Contact Lens Examiners. Brianna is an ophthalmic speaker and author approved by both national boards to conduct ABO-NCLE approved courses for the issuance of continuing education credits.

Gerald Ludwin

Gerald R. Ludwin, B.A., FOAA, is an author of Optical Training Institute's Optician Development Program. His work included researching, writing and editing courses and coaching optical professionals studying OTI coursework.

Previously, he served for five years as an instructor of Ophthalmic Optics at Citrus College in Glendora, CA., and was actively involved in all phases of the optical industry for over twenty years.

With an ABO Master in Ophthalmic Optics, Gerald holds a Lifetime Teaching Credential with the California Community Colleges.

Editors

Dr. Eilene Kinzer, O.D., M.Ed. / V.F.L., F.A.A.O.

Dr. Eilene Kinzer is an Editor for Optical Training Institute. As an Editor, her responsibilities include reviewing content for the Optician Development Program and continuing education courses as well as evaluating content for technical accuracy.

In addition to serving as an Editor for the Optician Development Program, Dr. Kinzer serves as an Associate Professor of Optometry at University of Pikeville's Kentucky College of Optometry. In this role, she teaches myriad courses ranging from Basic Optometry Theory and Techniques I and II to Ophthalmic Optics and Ocular Anatomy to Leadership in Health Care and Personal Development. Her research interests include diabetes and glaucoma.

Dr. Kinzer earned her Doctor of Optometry (O.D.) from Pacific University College of Optometry, where she graduated with honors. Dr. Kinzer completed an Advanced Ocular Care residency at Indiana University College of Optometry. She also earned a Master of Education, Visual Function in Learning (M.Ed. / V.F.L.) degree from Pacific University and a Bachelor of Science in Biology (B.S.), summa cum laude, from Metropolitan State College of Denver. Dr. Kinzer is also a Fellow of the American Academy of Optometry.

June Rogers

June Rogers is an Editor at Optical Training Institute. As an editor, her responsibilities include creating and reviewing new content for the Optician Development Program and continuing education courses as well as evaluates content for technical accuracy. June also contributes to the process of creating recognized education programs for Licensing requirements.

In addition to serving as Editor for the Optician Development Program, June serves as a Customer Service Specialist with Essilor Labs of America. In this role, she provides customer service, maintains the continuity between the lab and Eye Care professionals. She helps manage order pipelines to include order entry, researching complications and solutions and providing product knowledge and training to practitioners.

Prior to joining Essilor, June was an adjunct instructor at Reynolds Community College. In this role, she taught optical students and guided them in the development and refinement of the skills necessary to become a licensed dispensing optician, including patient measurements, frame and lens materials, frame and lens selection, prescription analysis, and adjustment techniques, among others.

Throughout her career, June has had extensive teaching and education experience. While at Luxottica, June was a General Manager and Regional Mentor responsible for training opticians in sales techniques, adjustment techniques, and office management. She also served as a General Manager and regional mentor with US Vision for future licensed opticians.

June holds an Associate's of Applied Science in Opticianry as well as Associate's of Science in Mathematics. She has attained ABOC and NCLEC certifications by the American Board of Opticianry and the National Contact Lens Examiners. Additionally, her professional credentials include holding a Dispensing License in Virginia as well as a Contact Lens Endorsement for the Commonwealth of Virginia to fit contact lenses. June also sat on the Board of Hearing Aid Specialists and Opticians for Virginia, including multiple years as the Board Chair.

Justin Mathias

Justin Mathias is a content writer and editor at Optical Training Institute. As an editor and writer, his responsibilities include writing and editing scripts for educational courses, videos, and ensuring content is both accurate, and presented in a manner that is easily understood by students.

In addition to his work with OTI, Justin works as a Licensed Dispensing Optician in Nashville, Tennessee, for Lenscrafters. In this role, he is engaged in the daily duties of an Optician working with the public. He is responsible for optical sales, finishing lab activities, eyewear inspection, fitting and adjustments, and troubleshooting.

Prior to working with Lenscrafters, Justin worked as a Licensed Dispensing Optician for Morgenthal Frederics in Miami Florida at the Bal Harbour Shops. In this role he was responsible for luxury optical sales as well as inspecting, fitting, and adjusting eyewear.

Justin is experienced in many facets of the optical industry. His career spans over 20 years during which time, he has worked in nearly every aspect of the profession, beginning with optical lab, progressing to dispensary management, eyewear distribution, and boutique ownership. Over the years, he has trained and guided apprentices who have become licensed dispensing opticians.

Justin holds an Associate's of Applied Science in Opticianry degree from Hillsborough Community College. He is licensed as a Dispensing Optician in both Tennessee and Florida. Justin is also certified by the American Board of Opticianry and the National Contact Lens Examiners. Further, he holds additional certification by ABO-NCLE as a Level III technical speaker and is qualified to teach and develop continuing education courses.

Kelsey Wheeler

Kelsey Wheeler is an Editor with Optical Training Institute. As an Editor, her responsibilities include reviewing and editing all published content for the Optician Development Program.

In addition to serving as Editor for the Optician Development Program, Kelsey serves as a Certified Optician & Eyewear Stylist at Image Optical in Nashville, Tennessee. In this role, she

is responsible for providing best-in-class service and expertise to her clients in styling and fitting luxury eyewear.

Prior to her current role, Kelsey spent five years as a Store Leader with Warby Parker where she managed all aspects of retail operations and nine years as a Lab Manager with LensCrafters where she managed all aspects of lab operations in a one-hour lab setting, including training new employees. During her time with Warby Parker, Kelsey served as the District Optical Lead for the Southwest District where she was responsible for screening optician candidates for technical knowledge, supporting the development of apprentice opticians, and driving success in eyewear quality and customer satisfaction. After relocation, she served as the District Training Lead for the Southeast District where she was responsible for creating and rolling out new Warby Parker training initiatives.

Kelsey is ABO and NCLE certified and licensed in the State of California.

Program Guidelines (Virginia)

Context

In order to assist with your review of the program, Optical Training Institute has compiled a list of content elements, which we understand to be requirements of the Commonwealth of Virginia based on our research of publicly available information. Note, this may not be a comprehensive list nor the most recent set of requirements. Nonetheless, we hope this is helpful and saves you time when reviewing the Optician Development Program.

Alignment with Virginia Guidelines

Topic	Location	Format
Manual Lensometry and Final Inspection • Neutralization of the sphere, cylinder, axis, prism, add power thickness, lens clock, single vision, bifocal, trifocal, occupational lenses, progressive additional lenses, proper use of PAL layout charts, internal and external lensometer parts, functions and appropriate use Verification of prescription, inspection of frame and lenses, apply state and federal regulations and standards, impact resistance, prescription aligner and axis aligning pliers, vertical and horizontal imbalance, prescribed prism, and slab off	• Spectacle Module V / Lesson 13: Lensometry and Verification • Spectacle Module V / Lesson 14: Instruments, Equipment and Tools • Spectacle Module V / Lesson 15: Overview of Optical Lab • Spectacle Module V / Lesson 17: Standards, Rules and Regulations	Text and Video
Eyewear Assembly • Lens insertion and removal for full plastic mounting, full metal mounting, groove mounting, semi-rimless and rimless mountings, and bench alignment	• Spectacle Module IV / Lesson 9: Frame Types and Materials • Spectacle Module VI / Lesson 19: Dispensing Procedures • Spectacle Module V / Lesson 14: Instruments, Equipment and Tools	Text and Video

Frame Repair • Replacement of nose pads, temple covers, temples, eyewire screws, and spring hinge screws. • Hinge repairs, nylon cord restringing. • Knowledge of appropriate tools used.	• Spectacle Module V / Lesson 14: Instruments, Equipment and Tools	Text and Video
Measurements & Measuring Instruments • Distance, intermediate and near interpupillary distances with various instruments, to include at a minimum, millimeter ruler and pupilometer segment, fitting and optical center heights with millimeter ruler or other measuring devices, pantoscopic tilt, vertex distance and wrap. • Frame measurements include A, B, ED, DBL and temple length	• Spectacle Module IV / Lesson 9: Frame Types and Materials • Spectacle Module IV / Lesson 12: Multifocal Designs • Spectacle Module V / Lesson 14: Instruments, Equipment and Tools	Text and Video
Eyewear fitting, Eyewear Adjusting & Hand Tools • Visually inspects all necessary areas: bridge fit, temple fit, frame alignment, lash and cheek clearance, vertex distance, pantoscopic tilt, etc. • Adjustments to include nose pad angles, temple spread, equaling vertex distance, horizontal alignment, face form, pantoscopic tilt, temple bends and mastoid adjustment. • Equipment to include: frame warmer, temple	• Spectacle Module V / Lesson 14: Instruments, Equipment and Tools • Spectacle Module VI / Lesson 19: Dispensing Procedures	Text and Video

angling pliers, nose pad pliers, snipe nose pliers, single and double padded bracing pliers, three piece mounting pliers, flat round pliers, cutting pliers, and screw drivers		
Rx Analysis • Compare new prescription to previous prescription, when applicable, to determine the amount of change as an indication of possible patient adaptive difficulties • Lens designs and options: single vision, bifocal, trifocal, occupational lenses, progressive addition lenses, aspheric, atoric, polarization, A/R treatments, tint, UV, scratch resistance, photochromic, HEV treatments, sport and industrial safety lens options • Lens material: ability to recognize appropriate lens materials based on rx and product availability, CR-39, polycarbonate, trivex, high index resins, crown glass, high index glass. Material characteristics to include impact resistance, thickness, weight, aberration, and tensile strength.	• Bootcamp Module III / Lesson 10: Interpreting a Prescription • Spectacle Module III / Lesson 6: Math and Science of Eyeglasses • Spectacle Module IV / Lesson 10: Lens Types and Materials • Spectacle Module IV / Lesson 11: Lens Treatments • Spectacle Module IV / Lesson 12: Multifocal Designs	Text and Video
Rx Troubleshooting • Frame: Material (weight/allergies),	• Spectacle Module VII / Lesson 20: Troubleshooting the Variety of Patients	Text and Video

appropriate frame/lens combination • Lenses: Material, design, and base curve comparisons, assessment of fitting placements • Rx: Assessment of visual complaint, when to refer	• Spectacle Module VII / Lesson 21: 5 Star Customer Service	
Determining Lifestyle Needs • Ability to interview consumer and identify variables that may impact the eyewear selection process or recommendations provided.	• Spectacle Module VI / Lesson 18: Art of Selling • Spectacle Module VII / Lesson 21: 5 Star Customer Service •	Text and Video
Recognize the need for various absorptive lens treatments, multiple pairs, occupational lens and frame designs, impact resistance, suitable frame styles, and lens materials to meet the consumer's needs (including industrial and recreation needs)	• Spectacle Module IV / Lesson 9: Frame Types and Materials • Spectacle Module IV / Lesson 10: Lens Types and Materials • Spectacle Module IV / Lesson 11: Lens Treatments • Spectacle Module IV / Lesson 12: Multifocal Designs • Spectacle Module VI / Lesson 18: Art of Selling • Spectacle Module VII / Lesson 21: 5 Star Customer Service	Text and Video

Comparing the Content of NAO's OCPP to OTI's ODP

In order to assist with your review of the program, we have compiled the below comparison of OTI's Optician Development Program with NAO's Ophthalmic Career Progression Program ("OCPP").

You will see that *all of the topics noted in the OCPP's course outline are included in the ODP*.

As reflected in this Program Overview, the ODP also includes high quality, modern multimedia content (including illustrations, videos, 3D animations) and an innovative instructional design.

NAO Topic	Where Topic is Covered in the ODP
Introduction	• **Spectacle Module I: Introduction to Optical**
History	• Lesson 1: History - pg. 56
Terminology	• Spectacle Course Glossary – pg. 67
Optical Professions, Organizations, and Regulatory Agencies	• Lesson 2: Optical Field and Professions – pg. 57
Ocular Anatomy and Physiology	• **Spectacle Module II: Ocular Anatomy, Physiology and Pathology** • **Spectacle Module III: Optical Concepts and Principles**
Structures and Functions	• Lesson 3: Anatomy of the Eye – pg. 58 • Lesson 4: Major Ocular Structures and Functions – pg. 57
Pharmacology	• Lesson 5: Ophthalmic Disorders – pg. 58
Refractive Errors, Anomalies, Diseases of the Eye, and Refractive Surgeries	• Lesson 5: Ophthalmic Disorders – pg. 58 • Lesson 6: Refraction – pg. 59
Theory of Refraction	• Lesson 6: Refraction – pg. 59
Optical Theory 1	• **Spectacle Module III: Optical Concepts and Principles**
Principles of Light	• Lesson 6: Refraction – pg. 59
Laws of Reflection and Refraction	• Lesson 6: Refraction – pg. 59
Basic Prism and Characteristics of Ophthalmic Lenses	• Lesson 8: Prism and Focal Length – pg. 60
Lens Powers	• Lesson 7: Math and Science of Eyeglasses – pg. 60 • Lesson 8: Prism and Focal Length – pg. 60
Optical Dispensing Theory 1	• **Spectacle Module IV: Lens and Frame Materials and Designs**

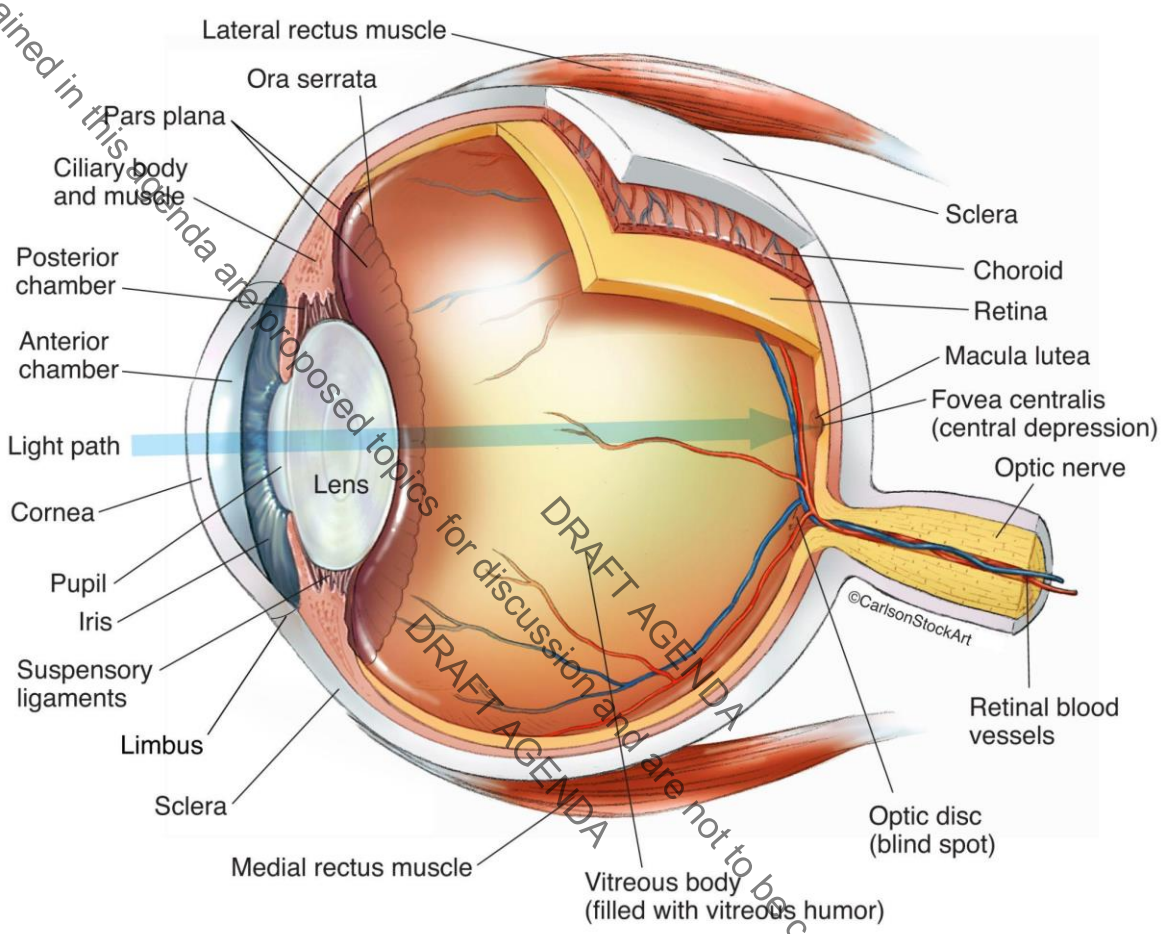
Lens Materials and Designs	• Lesson 10: Lens Types and Materials – pg. 62
Ophthalmic Frames Materials and Designs	• Lesson 9: Frame Types and Materials – pg. 62
Multifocal and Progressive Addition Lenses	• Lesson 12: Multifocal Designs – pg. 62
Optical Lab Theory	• **Spectacle Module III: Optical Concepts and Principles** • **Spectacle Module IV: Lens and Frame Materials and Designs** • **Spectacle Module V: Instrumentation and Regulations** • **Spectacle Module VI: Eyewear Selling and Handling**
Transposition	• Lesson 7: Math and Science of Eyeglasses – pg. 60
Boxing System	• Lesson 9: Frame Types and Materials – pg. 62
Finishing Room Calculations	• Lesson 15: Overview of Optical Lab – pg. 64
Optical Waste Management	• Lesson 22: Management Skills and Optimal Office Flow – pg. 67
Lensometry and Verification	• Lesson 13: Lensometry and Verification – pg. 64
Tinting and Tampering	• Lesson 11: Lens Coatings and Treatments – pg. 62 • Lesson 14: Instruments, Equipment and Tools – pg. 64
Optical Tools, Standard Alignment, and Basic Adjustments	• Lesson 14: Instruments, Equipment and Tools – pg. 64 • Lesson 19: Dispensing Procedures – pg. 66
Optical Theory 2	• **Spectacle Module III: Optical Concepts and Principles** • **Spectacle Module IV: Lens and Frame Materials and Designs** • **Spectacle Module VI: Eyewear Selling and Handling**
Prentice's Rule and Total Power in any Meridian	• Lesson 7: Math and Science of Eyeglasses – pg. 60 • Lesson 8: Prism and Focal Length – pg. 60
Vertex Distance, Effective Power, and Compensated Power, Tilt/Wrap	• Lesson 7: Math and Science of Eyeglasses – pg. 60 • Lesson 9: Frame Types and Materials – pg. 62
Spectacle Magnification, and Unequal Refractive Errors	• Lesson 8: Prism and Focal Length – pg. 60
Mirrors	• Lesson 18: Art of Selling – pg. 66
Telescopes and Binoculars	• Lesson 18: Art of Selling – pg. 66

Prism II, Prism Notation, Splitting Prism, Compounding Prism, Resulting and Resolving Prism	• Lesson 8: Prism and Focal Length – pg. 60
Lens Aberrations	• Lesson 10: Lens Types and Materials – pg. 62
Optical Dispensing Theory 2	• **Spectacle Module IV: Lens and Frame Materials and Designs** • **Spectacle VI: Eyewear Selling and Handling** • **Spectacle VII: Customer Service/Patient Care**
Dispensing Eyewear	• Lesson 19: Dispensing Procedures – pg. 66
Understanding Today's Anti-Reflective Lenses	• Lesson 11: Lens Coatings and Treatments – pg. 62
The Evolution of AR	• Lesson 11: Lens Coatings and Treatments – pg. 62
Glare and Photochromic	• Lesson 11: Lens Coatings and Treatments – pg. 62
Polarized Lenses- Mirror Coatings	• Lesson 11: Lens Coatings and Treatments – pg. 62
Sports and Safety Vision	• Lesson 18: Art of Selling – pg. 66
Low Vision	• Lesson 18: Art of Selling – pg. 66
Dispensing to Seniors	• Lesson 18: Art of Selling – pg. 66 • Lesson 20: Troubleshooting the Variety of Patients – pg. 67
Pediatric Dispensing	• Lesson 18: Art of Selling – pg. 63 • Lesson 20: Troubleshooting the Variety of Patients – pg. 64
Optical Business Management	• **Spectacle Module V: Instrumentation and Regulations** • **Spectacle Module VI: Eyewear Selling and Handling** • **Spectacle Module VII: Customer Service/Patient Care**
Inventory and Product Life Cycle	• Lesson 22: Management Skills and Optimal Office Flow – pg. 67
HIPAA/EEOC/HR	• Lesson 17: Standards, Rules, and Regulations – pg. 64
Other Regulatory Agencies	• Lesson 17: Standards, Rules and Regulations – pg. 64
Marketing and Merchandising	• Lesson 21: 5 Star Customer Service – pg. 67
Introduction (Contact Lenses)	• **Contact Lens Module I: Introduction to Contact Lenses**
Introduction to Contact Lenses	• Lesson 1: History – pg. 69 • Lesson 2: Types of Materials and Designs – pg. 69

Lifestyle Factors and Their Effects on Contact Lenses	• Lesson 5: Conditions and Lifestyles Affecting Contact Lenses – pg. 72
Anatomy and Physiology (Contact Lenses)	• **Contact Lens Module II: Anatomy, Physiology, and Pathology** • **Contact Lens Module III: Contact Lens Optical Concepts and Principles**
A & P Relative to Contact Lens Wear	• Lesson 4: Structures and Functions of the Eye – pg. 71
Ocular Pathology Relative to CL Wear	• Lesson 5: Conditions and Lifestyles Affecting Contact Lenses – pg. 72
Refractive Errors Relative to CL Wear	• Lesson 6: Refractive Errors Pertaining to Contact Lenses – pg. 72
Contact Lenses Theory	• **Contact Lens Module I: Introduction to Contact Lenses** • **Contact Lens Module IV: Instrumentation, Modification and Verification** • **Contact Lens Module V: Dispensing and Follow-Up Procedures**
Instrumentation and Testing Procedures	• Lesson 8: Keratometer – pg. 74 • Lesson 9: Digital Corneal Topographer – pg. 74 • Lesson 10: Slit Lamp and Angles – pg. 75
Analyze and Interpret Information- Make Recommendations	• Lesson 11: Fitting Methods – pg. 75 • Lesson 13: Advanced Fitting Techniques – pg. 77 • Lesson 14: Assessment – pg. 77
Lens Characteristics	• Lesson 3: Basic Contact Lens Design – pg. 69
Gas Permeable (GP) Lens Modification	• Lesson 12: In-Office Modification and Inspection – pg. 75
Contact Lens Practice	• **Contact Lens Module V: Dispensing and Follow-Up Procedures** • **Contact Lens Module VI: Laws and Regulations**
Presenting Contact Lens Options and CL Solutions	• Lesson 14: Assessment – pg. 77 • Lesson 15: Proper Wear and Handling – pg. 77 • Lesson 16: Proper Care – pg. 77
Patient Education	• Lesson 15: Proper Wear and Handling – pg. 77 • Lesson 16: Proper Care – pg. 77
Lens Inventory	• Lesson 18: Recall Procedures – pg. 78
Contact Lens Glossary and Prefixes & Suffixes	• Contact Lens Course Glossary – pg. 78

Appendix A: Sample Lesson

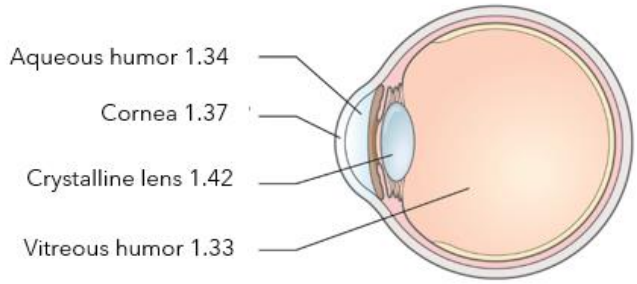
Major Ocular Structures and Functions



Right Eye (viewed from above)

Globe

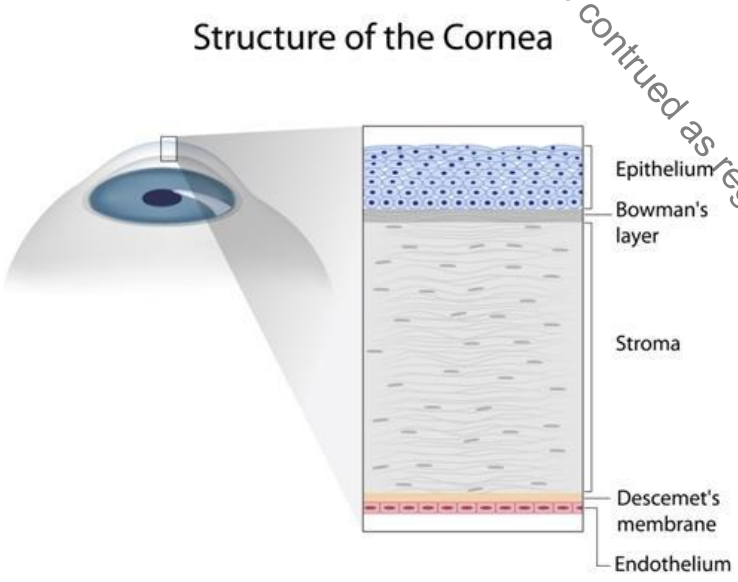
The eye is very much like a camera. The camera produces an image by focusing light through a system of lenses to a sharp focus upon the film. In the eye, the retina is like the film of a camera and the cornea and crystalline lens are the lenses which focus the light. The refractive power of the average cornea is equal to about 43.00 diopters while that of the crystalline lens is 17.00 diopters. The combination of these two results in a total refractive power of a full 60.00 diopters. The transparent living structures through which light passes are the tear layer, cornea, aqueous humor, crystalline lens, and vitreous humor. The term "miracle of sight" takes on new meaning when one considers how living transparent tissue, devoid of blood vessels, can focus 60 diopters of power precisely on the retina. Combined with the variable power of the crystalline lens, and the ability of the retina to adjust its sensitivity to light under variable conditions makes this optical instrument, the human eye, the most sophisticated and exquisite of all.



The diagram above illustrates the index of refraction of the various transparent structures of the eye. The meaning and significance of the index of refraction will become apparent when we cover that subject in later lessons. For now, simply memorize the numbers associated with each structure.

Let us begin by taking a look at some of the major parts of the eye along with the mechanisms that allow us to see. In doing so we will follow parallel rays of light through the eye and examine the sequence of events that actually produces sight.

The first structure through which light passes upon reaching the eye is the cornea. The cornea is, in effect, like the window of the eye. It is the eye's major refracting body containing approximately 40 diopters of focusing power. When we say light is refracted, it simply means it is bent or deviated from its original direction. So when a patient visits an eye care professional for an examination or a "refraction," the doctor is, in effect, bending light in an effort to improve the patient's vision. The cornea consists of five distinct layers. The outermost layer is the epithelium, followed by Bowman's Membrane, the Stroma, Descemet's Membrane, and finally, the Endothelium.



The corneal epithelium is highly regenerative. The cells reproduce so rapidly that a mild scratch or abrasion of the cornea can heal itself within 24 hours. This is not true of the other corneal layers. Overall, the cornea is about 0.5 mm thick at its center with the stroma comprising 90% of the total thickness. Knowledge of corneal physiology becomes especially important when dealing with contact lenses.

The next medium light encounters after passing through the cornea is a fluid called the aqueous humor. The aqueous humor is located in the areas which are known as the anterior aqueous chamber and the posterior aqueous chamber. Looking at the diagram, the anterior chamber is bordered by the cornea, iris and pupil, while the posterior chamber is bordered by the iris and the crystalline lens. The aqueous humor is a watery substance which functions to aid in keeping the cornea moist, is a source of nutrients to the cornea, and it is also responsible for maintaining the pressure inside the eye known as the intraocular pressure. The aqueous humor is continually being manufactured by the ciliary body and it leaves the eye through a drainage canal known as the Canal of Schlemm. If the aqueous becomes inhibited from draining at a normal rate, it can cause an increase in the intraocular pressure. Some pressure inside the eye is desirable since it allows the eye to maintain its normal shape. However, if that pressure is elevated and sustained at an unacceptable level it could cause a condition known as glaucoma.

After passing through the aqueous humor, the light passes through the pupil and then to the crystalline lens. The crystalline lens is located directly behind the iris and contains about 17 diopters of refractive or focusing power. Sometimes the crystalline lens will be considered part of the middle layer of the eye since it is suspended in the ciliary body. However, it really needs to be considered on its own. It functions to bring rays of light to focus on the retina. Suspensory ligaments hold the lens in place and are attached on the other end to the ciliary body. The crystalline lens is normally elastic and flexible with the ability to get thicker and thinner. As the lens gets thicker, its refractive power increases. As it gets thinner, the refractive power decreases. When the eye focuses on an object up close, as when reading, the crystalline lens gets thicker since more refractive power is needed for that activity. The thickening of the lens is accomplished by the relaxation of the ciliary muscle to which it is attached. This phenomenon is known as accommodation, which will be discussed in further detail in the next lesson.

After passing through the crystalline lens, the light then enters the vitreous humor. The vitreous is a thick, transparent, colorless, gel-like mass which is located in a chamber between the retina and the crystalline lens. This chamber is called, appropriately enough, the vitreous chamber. The vitreous serves to maintain the proper shape and temperature of the eye. And unlike the aqueous humor it is neither regenerated nor replaced.

Finally, the light reaches the retina. The retina is the innermost coat of the eye and is to the eye what film is to a camera. All the transparent elements of the eye we just covered are designed to work together with the goal of bringing light to a sharp focus on the retina. The retina is composed of two kinds of photosensitive cells or receptors; these are called the rods and the cones. Refer to the table below for a description of the function of each of these

receptors. As you can see the cones are responsible for day vision and perceiving detail and color. While the rods are used for night vision, peripheral vision, and perceiving black and white.

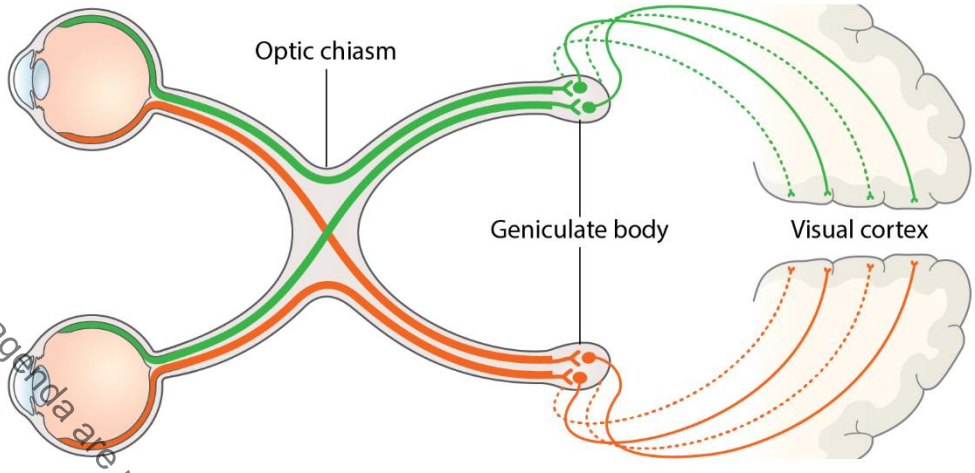
CONES	RODS
Day vision	Night vision
Detail	Peripheral vision
Color	Black & white

The area on the back of the retina is called the macula, and in the center of the macula is a small depression called the fovea centralis. This is the area of the retina that provides the sharpest vision. At the fovea the population of the cones is the greatest. As we radiate outwardly from the fovea, the population of cones gradually decreases, and the population of rods increases. So, to view objects in sharp detail, or to perceive color, one must look directly at it, activating the high density of cones in the fovea. Again, night vision or peripheral vision is largely the function of the rods whose population gradually increases away from the fovea. Also, the retina has the ability to adapt to various lighting conditions. When going from a well-lit room to a dark room, for example, objects may not at first be clearly seen. But in about 20 minutes or so they may be seen more clearly. Although the outline of the objects can be seen in a dark room, neither detail nor color can be perceived since night vision is primarily a function of the rods.

Some of the non-transparent structures of the eye include the choroid which is a blood-rich layer underneath the retina that functions to provide nutrients to the retina as well as to other parts of the eye. The sclera is the tough leather-like outer coating of the eye also known as the "white" of the eye. It provides protection and helps maintain the eye's shape. The sclera joins and is continuous with the cornea.

The iris is a circular membrane suspended behind the cornea and found immediately in front of the lens. It is the color part of the eye. The iris functions to regulate the amount of light entering the eye by changing the size of the pupil. The pupil is the central opening of the iris through which light is permitted to enter the eye.

The Optic Nerve is the special nerve of the sense of sight that carries impulses from the retina to the brain. It is similar to a cable containing millions of tiny wires which are connected to the rods and cones. After leaving the eye, the optic nerves continue along what is called the visual pathway. Here, the optic nerves cross at an X- like structure called the optic chiasm and end up at an area of the brain called the geniculate body.



The information is then transmitted to the visual cortex in another area of the brain called the occipital lobe where conscious recognition of objects occurs. So we do not actually see with our eyes, we see with our brain. Since we have two eyes, the brain receives two images, one from each eye. The ability to merge these two images into one is called fusion. If, for some reason, the two images cannot be adequately fused, double vision or diplopia results.

Click the link below to learn about the three major layers, or tunics, of the eye.

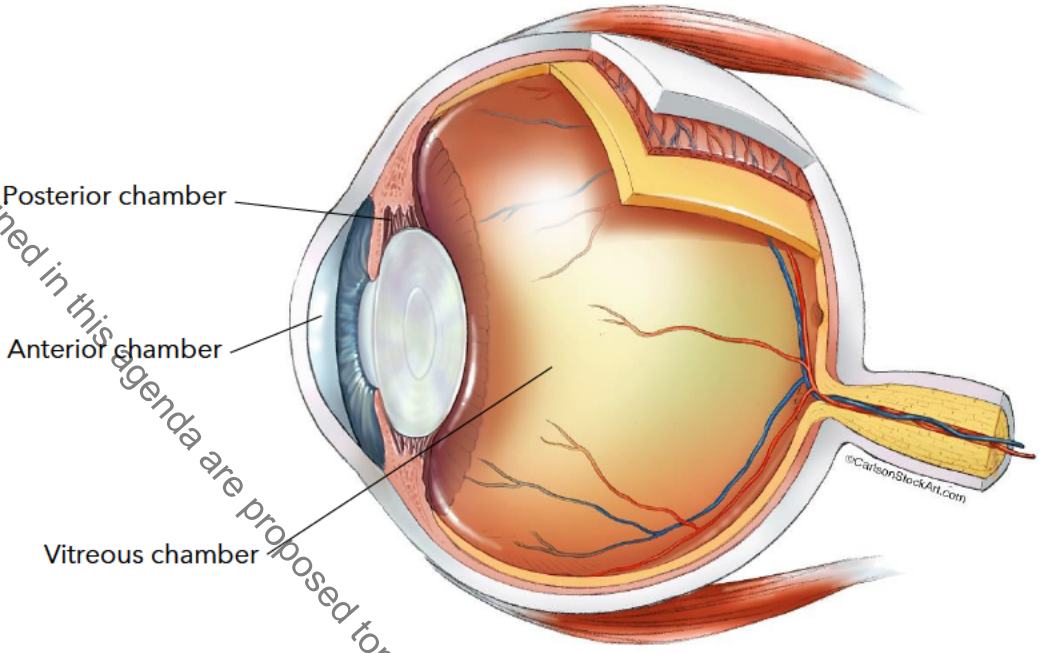
Video: Tunics

Chambers

The eye can be divided into three spaces or chambers: the space between the back of the cornea and the iris is called the *anterior chamber;* the space between the iris and the lens is called the *posterior chamber;* the largest space between the lens and the retina is called the *vitreous chamber.*

Often a distinction is made between the chambers and what are known as the bodies or cavities.

The anterior body/cavity contains both the anterior and posterior chambers. The posterior body/cavity only contains vitreous humor and can also be called the vitreous body/cavity as well as the vitreous chamber.



To help eliminate some confusion, remember that the anterior body/cavity is in front of the crystalline lens and the posterior body/cavity is behind the crystalline lens.

Accommodation

During accommodation, the eye adjusts for viewing objects at various distances. This is accomplished by the crystalline lens changing shape through the action of the ciliary muscle. Associated with accommodation is convergence and the constricting of the pupils.

Click the link below to view how eye accommodation works.

3D Animated Video: Accommodation (Click to Watch)

Accommodation is a considerably different experience for the myopic and hyperopic patient. A myope is already nearsighted and can usually see very close objects without any accommodation at all. Your myopic patient might simply slip off their distance glasses when they read or use a computer. For this same reason, many myopes do not appear to need multifocal lenses until much later in life than an emmetrope or a hyperope.

The hyperope is naturally farsighted and constantly uses the crystalline lens to focus objects farther away than 20 feet, or optical infinity. This can lead to eyestrain and headaches for the hyperope and is relieved with plus power spectacles or contact lenses. Many hyperopes can

go without glasses until they begin to reach the age of presbyopia, especially if they never experience asthenopia or headache.

If a physician suspects a child to be hyperopic, the crystalline lens must be restricted to allow a true refraction of the corneal power only, which is commonly done by using a cycloplegic eye drop.

The crystalline lens and accommodation for near

Since the eye converges when viewing an object at a near distance, as when reading, the pupillary distance for near vision is narrower than that for distance viewing. The amount the eye converges will vary from one individual to another. Therefore, a near pupillary distance measurement should always be taken manually. An old way of thinking was to take a standard deduction of 1.5mm to 3mm per eye but that can cause undue stress on the patient. Many of the computerized optical charting systems on the market will automatically take that deduction and you will need to override those measurements and input the correct measurement.

As a general "rule-of-thumb", eyes with wider distance PD's will converge more for reading than those with narrower distance PD's.

DISTANCE PD	SUBTRACT FOR NEAR
Less than 62 mm	1.5 mm
62-66 mm	3 mm
More than 66 mm	4 mm

Appendix B: Detailed Program Outline

Optician Development Program

Bootcamp: Opticianry 101

This course is a quick start program designed to provide the initial foundation to get a new optician up to speed quickly or provide a helpful refresher for experienced options. The course consists of 7 modules, and a total of 30 lessons. There are a variety of quizzes, totaling 135 questions for the student to track their progress and retain information.

Introduction to Bootcamp Course

The introduction section serves as a welcome to the student. The components of the course are discussed so the student knows what to expect as they progress through.

Included Media

- Welcome Video
- Personal and Professional Goals Video
    - Asks the student to create short term and long-term goals
- Fast Facts on the Profession Video
    - Top 5 skills as an optician
    - Employment Projections

Module I: Introduction to Optical and Customer Service

This section will cover the basic skills of working in customer service and how to make a good first impression on customers. It includes how to best apply these basic skills in the optical field. It concludes by covering the various professions in the eye care field and their duties. An optician's role is discussed and how they fit into the dynamic of the optical field.

Topics Covered

- Greeting and active listening skills
- Attention to detail
- Multitasking
- Communication skills
- Computer proficiency
- Teamwork
- Top 10 customer service skills
- Lifestyle selling
- Patient care
- Handling common questions
- Working with special needs patients
- Optometrist vs Ophthalmologist
- Optometric Technician/Assistant
- Optometric Scribe

- Receptionist
- Orthoptist
- Ocularist
- Optician

Module Components

- Lesson 1: Customer Service Basics
- Lesson 2: Crafting Optical Sales Skills
- Lesson 3: What is an Eye Care Professional?
- Module I Quiz: Lessons 1 - 3
- Hype Video 1
    - Overcoming obstacles of the Bootcamp

Module II: Refractive Errors

This section is an introduction to the eye's functions and image processing. The basic structures of the eye that produce sight are discussed. It covers the fundamentals of refractive errors and how they affect an individual's vision in their daily life.

Topics Covered

- Introduction to visual problems
- Comparison of eyes to a camera
- Snellen chart and 20/20 vision
- Introduction to plano lenses
- Early telltale signs of the refractive error
    - Myopia
    - Hyperopia
    - Astigmatism
    - Presbyopia
- How to correct the refractive error
    - Myopia
    - Hyperopia
    - Astigmatism
    - Presbyopia
- Introduction to minus and plus lenses
- Astigmatism- football vs basketball reference
- Why presbyopia occurs and what age
- Misconceptions related to refraction
- Highlighting “a-ha” moments

Module Components

- Lesson 4: Why Do People Wear Eyeglasses?
- Lesson 5: Myopia
- Lesson 6: Hyperopia
- Lesson 7: Astigmatism
- Lesson 8: Presbyopia
- Lesson 9: Recap of all Refractive Errors
- Video: Review Hard Concept 1
    - How to remember and understand each refractive error and their corrective options
- Hype Video 2
    - Personal story of how opticians make an impact
- Module II Quiz: Lessons 4 - 9
- Progression Quiz: Lessons 1 - 9
- Progression Quiz Review Video: Lessons 1 - 9
    - Video gives rationales for the questions

Module III: Understanding a Prescription

This section explains the components of an eyeglass prescription and how to interpret it as an optician. It discusses when interpreting the prescription, how to decipher the eyewear needs for the patient. It covers how to calculate the overall prescription strength given the total components.

Topics Covered

- Multiple sample prescriptions
    - Myopia
    - Hyperopia
    - Presbyopia
    - Astigmatic
- Basic algebra review
- Required components for the prescription to be valid
- Rule of thumb regarding prescription strength

Module Components

- Lesson 10: Interpreting a Prescription
- Lesson 11: How Prescription Affects Vision
- Lesson 12: Recap of Understanding Prescriptions
- Video: Review Hard Concept 2

    - Highlight main takeaways from interpreting a prescription
- Module III Quiz: Lessons 10 - 12
- Hype Video 3
    - Key things to remember throughout the Bootcamp
- Progression Quiz: Lessons 1 - 12
- Progression Quiz Review Video: Lessons 1 - 12
    - Video gives rationales for the questions

Module IV: Basics of Frames

This section is an introduction to the various frame styles and designs, including materials. The main frame components are discussed as well as the various face shapes and how some frame shapes and designs are more compatible with them than others.

Topics Covered

- Frame materials and their benefits
    - Plastic- cellulose acetate
    - Metal- monel, titanium, nickel, stainless steel
- Components of a frame
    - Basic understanding of how components affect patient fit
- Frame designs
    - Full frame
    - Grooved frame
    - Rimless frame
    - Combination frame
- Six face shapes/types and which frame shape/design is optimally appealing
- Other facial features that frame shapes/designs are flattering on
- Examples of lifestyle needs and why certain frames would work better

Additional Components

- Lesson 13: A Look at Different Frames
- Lesson 14: Selecting the Right Frame
- Lesson 15: Recap on Selecting a Frame
- Video: Review Hard Concept 3
    - How to best make frame recommendations while still taking into consideration the patient's preferences
- Hype Video 4
    - Halfway through the Bootcamp
    - Grow your career as an optician

- Module IV Quiz: Lessons 13 - 15
- Large Quiz: Lessons 1 - 15
- Hype Video 5
    - Checking on onset goals

Module V: Basics of Lenses

This section discusses the different eyeglass lens styles, specifically single vision and multifocal lens designs. It covers glass lenses and the properties. It then covers the various other lens materials and compares them, with discussions of their properties, advantages and disadvantages. Choosing an appropriate frame style based on the properties of the lenses will be covered. Impact resistance is discussed and why this lens property is beneficial regarding frame types as well as safety features.

Topics Covered

- Single vision
    - Distance
    - Intermediate
    - Near
- Multifocals
    - Lined bifocal
    - Lined trifocal
    - Progressive
- Common questions patients ask about their lenses
- Glass lenses
    - Properties
    - Advantages
    - Disadvantages
- CR-39
    - Properties
    - Advantages
    - Disadvantages
- Polycarbonate
    - Properties
    - Advantages
    - Disadvantages
- Trivex
    - Properties
    - Advantages
    - Disadvantages

- High Index
    - Properties
    - Advantages
    - Disadvantages
- Lens materials and their features
- Optimal frame choices when combined with lens materials

Module Components

- Lesson 16: Introduction to Lens Materials
- Lesson 17: CR-39
- Lesson 18: Polycarbonate and Trivex
- Lesson 19: High Index
- Lesson 20: Recap of Lens Materials
- Lesson 21: Lens Materials Regarding Frame Types
- Module V Quiz: Lessons 16 - 21
- Video: Review Hard Concept 4
    - Prescription Rule of Thumb
- Hype Video 6
    - Helpful tip to build relationships with customers
- Progression Quiz: Lessons 1 - 21
- Progression Quiz Review Video: Lessons 1 - 21
    - Video gives rationales for the questions

Module VI: Basics of Lens Treatments

This section introduces the different lens treatments that are available. It explains that only generic names will be used in the Bootcamp due to the many different manufacturers for each lens treatment. The lens treatment's main benefits and the lifestyle need each one provides is covered. Examples of lifestyle selling questions are provided and which lens treatment to recommend for each.

Topics Covered

- Introduce lens treatments
    - Anti-reflective coating
    - Scratch-resistant coating
    - UV protection coating
    - Photochromic lenses
    - Polarized and tinted lenses
- Anti-reflective coating
    - Definition

    - Benefits
    - When to recommend
- Scratch-resistant coating
    - Definition
    - Benefits
    - When to recommend
- UV protective coating
    - Definition
    - Benefits
    - When to recommend
- Photochromic lenses
    - Definition
    - Benefits
    - When to recommend
    - Which patients are not ideal
- Tinted lenses
    - Definition
    - Benefits
    - When to recommend
    - Drawbacks
- Polarized lenses
    - Definition
    - Benefits
    - When to recommend
    - Drawbacks
- Lifestyle selling questions and recommendations

Module Components

- Lesson 22: Introduction to Lens Treatments
- Lesson 23: Anti-Reflective, Scratch-Resistant, and UV protective Coatings
- Lesson 24: Photochromic Lenses
- Lesson 25: Polarized and Tinted Sunglasses
- Lesson 26: Recap of Lens Treatments
- Module VI Quiz: Lessons 22 - 25
- Hype Video 7
    - Terminology Challenge
- Video: Review Hard Concept 5
    - How to easily remember each lens treatment and their benefits
- Hype Video 8

- Quick check in
- Progression Quiz: Lessons 1 - 25
- Progression Quiz Review Video: Lessons 1 - 25
  - Video gives rationales for the questions
- Hype Video 9
  - Reflect back on why the Bootcamp was started

Module VII: Dispensing and Standards

This section begins with a brief introduction to contact lenses including the basic types of contact lenses, disposable rate, and ideal candidates. It then covers the basic rules, regulations and standards that everyone must adhere to from the very first minute on the dispensary floor. The governmental agencies that set these regulations are discussed. There is an overview of insurance and how to properly handle off site lab communication. This section also discusses the proper dispensing procedures that an optician must follow and explains how optical offices will vary and to always follow the protocols in place. There's an introduction to the very basic frame adjustments as well as proper handling of eyewear. The section concludes with a refresher on all the content learned in the Bootcamp, and how to apply the knowledge learned when at work and assisting patients with their eyewear.

Topics Covered

- Definition of contact lenses
- Soft vs hard contact lenses
- Disposable rates
  - Daily
  - Biweekly
  - Monthly
  - Extended wear
- Good candidate determinants
- Bad candidate determinants
- Benefits of backup glasses
- HIPAA
  - The optician's duties regarding HIPAA
  - PHI
  - Records disposal
  - Violations and penalties
- ANSI Standards
  - When eyeglasses fail and how to handle it
- Insurance
  - Insurance card

    - Policy and benefits
    - Copays
- Off-site lab
    - Communication
    - Delays
- Eyewear inspection and verification
- Standard bench alignment
- Calling patient for pick up
- Storing of eyewear
- Adjustments
- Vision check
- Educating the patient
- Inviting the patient back
- Final impression on the patient
- Recap on learned material
- Step by step process on selling a pair of glasses
    - First impression and figuring out the patient's needs
    - Interpreting their prescription
    - Selecting a frame
    - Lifestyle selling and educating the patient
    - Lab communication
    - Check in process
    - Dispensing process

Additional Components

- Lesson 27: Introduction to Contact Lenses
- Lesson 28: Rules, Regulations and Standards
- Lesson 29: Final Dispensing Procedures
- Lesson 30: Putting It All Together
- Module VII Quiz: Lessons 27 - 29
- Progression Quiz: Lessons 1 - 29
- Progression Quiz Review Video: Lessons 1 - 29
    - Video gives rationales for the questions
- Video: Curveball Review Hard Concept
    - Understanding how a prescription impacts eyewear selection
- Large Quiz: Lessons 16 - 30
- Final Course Glossary

Closing of Bootcamp Course

The concluding section serves to congratulate the student for completing the Bootcamp course. It discusses what to expect as the student progresses to the next course, and a few helpful tips are given.

Included Media

- Closing of Course Video

Spectacle Course

This course is designed to help prepare for the National Opticianry Competency Exam administered by the ABO. The course consists of 7 modules, and a total of 22 lessons. There are a variety of quizzes, totaling 315 questions for the student to track their progress and retain information.

Introduction to the Spectacle Course

The introduction section serves as a welcome to the student. The components of the course are discussed so the student knows what to expect as they progress through the curriculum.

Included Media

- Welcome Video
- Personal and Professional Goals Video
    - Asks the student to create short term and long-term goals

Module I: Introduction to Optical

This module serves as an introduction and overview of the optical field. Discussions include development of the field and the history of spectacles, including historical trends. The various eye care professions are covered including their roles in the field and how an optician fits into the dynamic.

Topics Covered

- Developmental milestones
- Origin of spectacles
- Historical highlights of spectacle styles
- Modern trends
- Eye care professions and duties
    - Optometrist vs ophthalmologist
    - Optometric Technician/Assistant
    - Receptionist
    - Optometric Scribe
    - Orthoptist
    - Ocularist
    - Optician

Module Components

- Lesson 1: History

- Lesson 1 Quiz
- Lesson 2: Optical Field and Professions
- Lesson 2 Quiz
- Video: Terminology Challenge
- Module I Quiz
- Video: Hard Concept Review 1
    - Memory techniques for the many ophthalmic diseases and disorders
- Video: Exam Tip 1
    - Introduces the 7 exam tips upcoming through the course
    - Preparing for multiple choice questions
- Progression Quiz: Lessons 1 - 2
- Progression Quiz Review Video: Lessons 1 - 2
    - Video gives rationales for the questions

Module II: Ocular Anatomy, Physiology, and Pathology

This section surveys the major anatomical features of the human eye along with their physiological function. It includes a discussion of the cornea, iris, pupil, crystalline lens, suspensory ligaments, aqueous and vitreous humor, retina, rods and cones, choroid, optic nerve, macula, sclera, and ciliary body. Many pathologies such as glaucoma, cataract, and scotoma are described. Phorias and tropias will be presented and discussed.

Topics covered

- Anatomy of the eye
    - Globe
    - Adnexa
- How sight is produced
- Index of refraction for ocular structures
- Corneal layers
    - Properties and functions
- Extraocular muscles
    - Phoria
    - Tropia
- Cones and rods
- Optic nerve
- Major tunics of the eyeball
    - Video: anatomy of the tunics
- Accommodation
    - Distance and near
    - Video: how accommodation works

- Ocular conditions, diseases and disorders
    - Medications
- Low vision
    - Testing and assessment
    - Causes
    - Management
    - Dispensing

Module Components

- Lesson 3: Anatomy of the Eye
- Lesson 3 Quiz
- Lesson 4: Major Ocular Structures and Functions
- Lesson 4 Quiz
- Lesson 5: Ophthalmic Disorders
- Lesson 5 Quiz
- Video: Hard Concept Review 2
    - Easily understanding prism direction
- Module II Quiz
- Video: Exam Tip 2
    - Write down memorized material ASAP when taking exam
- Progression Quiz: Lessons 1 - 5
- Progression Quiz Review Video: Lessons 1 - 5
    - Video gives rationales for the questions

Module III: Optical Concepts and Principles

This section begins with a discussion of the metric system of measurement followed by a review of basic mathematical principles. The electromagnetic spectrum, the nature and propagation of visible light, and index of refraction is presented. This section concludes with a discussion of prism, prism diopter, the perception of lenses as prism, and Prentice's Rule.

Topics Covered

- Electromagnetic spectrum
    - Visible light
    - UV light and damage from exposure
    - Dispersion
    - Light wave and light theories
- Refraction
    - Index of refraction

    - Reflection
    - Absorption
    - Transmission
- Emmetropia vs Ametropia
- Monocular deficiencies
- Refractive Surgery
- Optical cross
- The corrected base curve theory
- Determining a base curve
- Regular vs Irregular Astigmatism
- Determining type of astigmatism
- Metric system
- Algebra
    - Video: math review
- Total diopter power of a lens
- Transposition
    - Video: how to transpose
    - Practice exercises
- True powers
- Vertex distance
    - Rule of Thumb
- Slab Off
    - How to calculate
    - Practice exercises
- Prism
    - Prentice's Rule
        - Practice exercises
    - Video: demonstrating Prentice's Rule
    - Direction of prism
    - Splitting prism
    - Determining decentration
    - Adding and canceling prism
    - Prism ANSI standards
- Focal length and power in diopters
    - Practice exercises

Module Components

- Lesson 6: Refraction
- Lesson 6 Quiz

- Hype Video 1
    - Why become ABO certified?
- Lesson 7: Math and Science of Eyeglasses
- Lesson 7 Quiz
- Lesson 8: Prism and Focal Length
- Lesson 8 Quiz
- Module III Quiz
- Video: Review Hard Concept 3
    - Calculating prism
- Video: Exam Tip 3
    - Remotely proctored exams
- Progression Quiz: Lessons 1 - 8
- Progression Quiz Review Video: Lessons 1 - 8
    - Video gives rationales for the questions

Module IV: Lens and Frame Materials and Designs

This section covers the actual shape and design of modern prescription ophthalmic lenses. Corrected curve lenses and the rationale for the use of commonly recommended base curves. Cylindrical shapes and their use in prescription ophthalmic lenses for the correction of astigmatism are discussed. It also surveys the common materials from which ophthalmic lenses are made along with a description of their general characteristics and potential uses. The relative merits of spectacle lens materials are compared. Lens treatments will be discussed as they are used for absorptive, protective, and cosmetic purposes. The multifocal designs section surveys various styles of multifocal lenses, their merits and uses will be outlined. The basic parts of the ophthalmic frame are discussed, and the various measurement criteria are summarized. Horizontal and vertical lens decentration is explained and the theoretical as well as practical minimum lens blank sizes are calculated based on frame dimensions, pupillary distance, and other practical considerations. Common frame materials will be surveyed with a brief discussion of the general characteristics of each. An outline of the various frame styles and bridge designs will emphasize the importance of proper bridge selection and temple length.

Topics Covered

- Frame components
    - Video: overview of frame parts
- Frame measurements
    - Datum system vs Box system
    - Frame markings
- Decentration
    - Practice exercises

- Patient measurements
    - Interpupillary distance
    - Optical center and segment height
- Frame materials and styles
- Lens mounting
- Selecting a frame based on face shape
- Bridge selection
- Frame recommendations for high prescriptions
- Lens design
    - Plus lens characteristics
    - Minus lens characteristics
    - Meniscus
    - Planoconcave
    - Planoconvex
    - Biconcave
- Lens as a prism
    - Video: explaining lens as a prism design
- Radius of curvature
- Lens surfaces
- Determining total power of a lens
    - Practice exercises
- Lens shapes
- Lens aberrations
- Base curve
- Cylinder lenses
- Compound lenses
- Spherical equivalent
    - Practice exercises
- Power cross method
- Power horizontally and vertically
- Lens materials
    - Index of refraction
    - Thickness
    - ABBE number
    - Additional properties and characteristics
- Hardening of lenses
- Heat and chemical treating
- Aspheric lenses
- Lens clock

- Lens treatments
    - Properties and characteristics
    - Technology & advancements
    - Advantages and disadvantages
    - Recommending and selling
- Multifocal designs
    - Various styles and their properties
    - Advantages and disadvantages of each design
- Creating separate eyeglasses from bifocal prescription
    - Practice exercises
- Patient measurements
    - Verification

Module Components

- Lesson 9: Frame Types and Materials
- Lesson 9 Quiz
- Lesson 10: Lens Types and Materials
- Lesson 10 Quiz
- Lesson 11: Lens Coatings and Treatments
- Lesson 11 Quiz
- Lesson 12: Multifocal Designs
- Lesson 12 Quiz
- Video: Review Hard Concept 4
    - Frame materials and characteristics
- Module 4 quiz
- Video: Exam Tip 4
    - Utilize previous questions and context clues on the exam
- Hype Video 2
    - Facts on the profession
- Progression Quiz: Lessons 1 - 12
- Progression Quiz Review Video: Lessons 1 - 12
    - Video gives rationales for the questions

Module V: Instrumentation and Regulations

This section begins with a study of the lensometer to include a survey of its principal parts as well as a summary of the measurements it is capable of reading. This section includes a step-by-step procedure for verifying a lens from a known prescription as well as neutralizing a lens from an unknown prescription. A survey and brief description of some basic tools used in the optical dispensary is included as well. The governmental and non-governmental regulatory

agencies are surveyed to include ANSI, OSHA, FDA, and ASTM. An abbreviated table of ANSI Standards is included to list the most commonly referenced tolerances for prescription ophthalmic lenses along with a table of other ANSI publications of interest to the optical dispenser. Professional liability for the products, services, and information dispensed to the public is addressed. Emphasis is placed on maintaining adequate, up-to-date product knowledge and of demonstrating genuine concern for the needs and well-being of the patient.

Topics Covered

- Lensometer components and functions
    - Video: demonstration of lensometer
- Lensometry
    - Verifying a lens from a known prescription
    - Neutralizing a lens from an unknown prescription
- Splitting prism
- Auto lensometer
- Corneal refraction pupilometer
    - Video: demonstration of using a pupilometer
- PD rulers
- Hand tools and pliers
    - Video: demonstration of pliers
- Frame warmers
- Distometer
- Lens caliper
- Lens clock
- Polariscope
- Progressive identifier
- Common repairs
    - Video: demonstration of common repairs
- Optical lab equipment
- Stock lenses
- Fabrication steps
    - Calculations
    - Surfacing
    - Finishing
    - Inspection
    - Dispensing
    - Video: demonstration on the fabrication of a lens
- Proper in-house lab protocols
- Pre-testing and diagnostic equipment

    - Snellen chart
    - Tonometer
    - Visual field testing
    - The Ishihara test
    - Titmus test
    - The Amsler Grid
- School screening
- Auto refractor/auto keratometer
- Digital measuring
- Regulating governmental agencies
    - ASTM
    - OSHA
    - ANSI
    - FTC
    - FDA
    - EEOC
- Tolerances
- Drop ball test
- HIPAA
    - Privacy Rule
    - PHI
    - Security Rule
    - Administrative safeguards
    - Violations and penalties

Module Components

- Lesson 13: Lensometry and Verification
- Lesson 13 Quiz
- Lesson 14: Instruments, Equipment and Tools
- Lesson 14 Quiz
- Lesson 15: Overview of Optical Lab
- Lesson 15 Quiz
- Lesson 16: Pre-Screening Basics
- Lesson 16 Quiz
- Lesson 17: Standards, Rules and Regulations
- Lesson 17 Quiz
- Module V Quiz
- Video: Review Hard Concept 5
    - Memorizing pliers

- Video: Exam Tip 5
    - Simulations offered on ABO-NCLE website
- Progression Quiz: Lessons 1 - 17
- Progression Quiz Review Video: Lessons 1 - 17
    - Video gives rationale to the questions

Module VI: Eyewear Selling and Handling

This section gives a detailed overview of the art of selling eyewear and how to excel as an optician on the dispensary floor. It covers the variety of patients that are encountered and how to best service them, including low vision patients. Multiple pair needs and safety wear needs are discussed and how to sell and recommend accordingly. This section also includes a thorough look at the dispensing process of eyeglasses. Frame adjustments are discussed extensively as well as how to educate patients on handling and taking care of their eyewear.

Topics Covered

- Lifestyle selling
    - Open ended questions
    - Be knowledgeable in products
    - Show and tell products
- Selling to a variety of patients
    - Children
    - Elderly
    - Low vision
        - Video: low vision aids
    - Special needs
- Multiple pair needs
- Safety eyewear needs
- Dispensing procedures
    - Inspection and verification
        - Video: how to verify lens measurements
    - Standard alignment
        - Horizontal alignment
        - Vertical alignment
        - Temple parallelism
    - Frame adjustments
        - Tilts
        - Face form
        - Temple positions
        - Nasal angles

- End piece styles
- Educating patients on proper care of their eyewear
  - Storing
  - How to clean
  - How to handle
- Frame materials and how to clean
- Wrapping up the dispense

Module Components

- Lesson 18: Art of Selling
- Lesson 18 Quiz
- Lesson 19: Dispensing Procedures
- Lesson 19 Quiz
- Module VI Quiz
- Video: Exam Tip 6
  - Use Your Tools
- Progression Quiz: Lessons 1 - 19
- Progression Quiz Review Video: Lessons 1 - 19

Module VII: Customer Service/Patient Care

This section serves to hone in on the customer service and patient care side of the optician role. It discusses the importance of creating positive experiences for patients and how to create a lasting impression. The section includes how to troubleshoot the variety of patients and provides multiple troubleshooting techniques and solutions for varying issues. Management skills are also discussed and how to achieve an optimal office flow.

Topics Covered

- Variety of patients and personalities
- Troubleshooting techniques
  - Common issues and solutions
- Escalating situations to a manager or the eye doctor
- First impression
- Creating "wow" experiences
- Top skills of an optician
  - Video: reviews the skills needed
- Office and patient communication
- Leadership skills
- Inventory management
  - Frame board management

    - Eyeglass lens management
    - Contact lens management
    - Pricing
- Waste management
    - Business product disposal
        - Paper
        - Biological
    - Eyeglass product disposal
- Legalities
    - Paperwork retention
    - PHI disposal
- Remakes and returns
- Hygiene and sanitation

Module Components

- Lesson 20: Troubleshooting the Variety of Patients
- Lesson 20 Quiz
- Lesson 21: 5 Star Customer Service
- Lesson 21 Quiz
- Lesson 22: Management Skills and Optimal Office Flow
- Lesson 22 Quiz
- Module VII Quiz
- Video: Hard Concept Review 6
    - Troubleshooting
- Video: Exam Tip 7
    - Miscellaneous tips
- Final Course Glossary

Closing of Spectacle Course

The concluding section serves to congratulate the student for completing the Spectacle course. There is a brief recap of the topics covered throughout the course that they should have learned and retained.

Included Media

- Closing of Course Video

Contact Lens Course

This course is designed to help prepare for the Contact Lens Registry Exam administered by the NCLE. The course consists of 6 modules, and a total of 19 lessons. There are a variety of quizzes, totaling 295 questions for the student to track their progress and retain information.

Introduction to the Contact Lens Course

The introduction section serves as a welcome to the student. The components of the course are discussed so the student knows what to expect as they progress through the curriculum.

Included Media

- Welcome Video

Module I: Introduction to Contact Lenses

This section serves as an introduction to contact lenses. Discussions include the history of contact lenses, including developmental milestones. It covers the various contact lens designs to include scleral, corneal, and semi-scleral designs. Some basic terminology is discussed and the various materials from which contact lenses can be made are surveyed and placed into historical perspective. The uses, advantages and disadvantages of the lens materials are covered. The parts of a contact lens are covered to include optic zone, peripheral curve, base curve, junction zone, and radius of curvature. The need for diopter to millimeter conversion is covered and a table is included. This section also includes a discussion of the relationship between sagittal depth and fit. Changing sagittal depth by manipulating lens diameter and /or base curve radius is presented.

Topics Covered

- Historical theories
- Historical development
    - Glass blown contact lenses
    - Plastic corneal lenses
    - Rigid Gas Permeable lenses
    - Hydrogel contact lenses
    - Silicone Hydrogel lenses
- Developmental milestones
- Lenses by Design
    - Scleral (haptic) lenses
    - Corneal lenses
    - Semi-scleral lenses
- Lenses by Material Design

    - PMMA
    - CAB
    - Silicone-Acrylate
    - Fluorocarbon and Fluorocarbon Silicone Acrylate
    - HEMA
    - Silicone Hydrogel
- Contraindications for soft lenses
- Basic Design Elements
    - Bicurve and Tricurve
    - Base curve
    - Total diameter
    - Blending
    - Secondary and intermediate curves
    - Anterior optical zone
    - Lens edge
- Radius related to diopter and sagittal height
    - Video: diopter and radius of curvature relationship
    - Rule of Thumb
    - Video: using Rule of Thumb to calculate
- Sagittal depth relationship
    - Video: demonstrating the relationship
- Vertex distance
- Wetting angle
- Dk value

Module Components

- Lesson 1: History
- Lesson 1 Quiz
- Lesson 2: Types of Contact Lenses and Materials
- Lesson 2 Quiz
- Lesson 3: Basic Contact Lens Design
- Lesson 3 Quiz
- Module I Quiz
- Video: Hard Concept Review 1
    - Exactly what is astigmatism
- Video: Exam Tip 1
    - Introduces the 6 exam tips upcoming through the course
    - Simulations offered on ABO-NCLE website
- Progression Quiz: Lessons 1 – 3

- Progression Quiz Review Video: Lessons 1 - 3
    - Video gives rationales for the questions

Module II: Anatomy, Physiology, and Pathology

This section begins with a review of certain anatomical structures which include the tear film, eyelids, conjunctiva, cornea, and limbus. It is followed by a discussion of some of the potentially adverse effects of contact lens wear such as corneal edema, corneal striae, conjunctiva and episcleral injection, giant papillary conjunctivitis, and corneal vascularization. Corneal epithelial staining patterns are then discussed and illustrated to cover those caused by direct trauma such as by a poorly edged or damaged lens, or by improper insertion, removal and recentering techniques. Also covered are staining patterns caused by defective tear film distribution over the cornea such as "three and nine-o-clock" staining. This section also covers patient selection. Using appropriate pre-fit testing and interviewing techniques, an attempt is made to identify contact lens candidates with the best prognosis for successful wear, as well as those with a reduced prognosis.

Topics Covered

- Globe and adnexa
- Cornea
    - Index of refraction
    - Layers
- Radius of curvature
- The Tear Film
    - General Functions
    - Lipid layer
    - Aqueous layer
    - Mucid layer
    - Testing the tear film
        - Video: demonstration of BUT test and Schirmer test
- Physiology and Abnormalities
    - Fornix
    - Crystalline lens
        - Accommodation
    - Presbyopia
    - Cataract
    - Canthi
    - Iris
        - Iris abnormalities
    - Pupil
    - Retina

        - Retinal abnormalities
    - Sclera
    - Choroid
    - Chambers of the eye
- Ocular pathologies
- Opacities of the media
- Keratoconus
- Patient selection testing
    - Reduced prognosis for successful fitting
    - Contact lens patient selection questionnaire
- Anatomical and physiological considerations
- Eyelids
    - Video: eyelid interaction with contact lens
    - Video: optimal blink vs partial blink
    - Video: blinking exercises
- Conjunctiva
- Corneal epithelial edema
    - Factors
    - Symptoms
    - Slit lamp observance and grading
- Microcystic edema
    - Symptoms
    - Slit lamp observance and grading
- Corneal striae
    - Symptoms
    - Slit Lamp observance and grading
- Conjunctival and Episcleral Injection
    - Symptoms
    - Grading
- Giant Papillary Conjunctiva
    - Symptoms
    - Grading
- Corneal Vascularization
    - Symptoms
    - Grading

Module Components

- Lesson 4: Structures and Functions of the Eye
- Lesson 4 Quiz

- Lesson 5: Conditions and Lifestyles Affecting Contact Lens Wear
- Lesson 5 Quiz
- Module II Quiz
- Hype Video 1
    - History and concept of contact lenses

Module III: Contact Lens Optical Concepts and Principles

This section covers basic principles of optics which must be considered when fitting rigid and soft contact lenses. It includes a discussion of vertex distance as well as the optical effects of the lacrimal lens, which is formed between the front surface of the cornea and the back surface (base curve) of the lens. Examples and practice exercises are included to cover instances of rigid lenses fit on K, steeper than K, and flatter than K. A review of refractive errors and prescription transposition is included, particularly in relation to contact lenses.

Topics Covered

- Refractive errors review
- Refraction vs prismatic effect
- Vertex distance
    - Conversion table
    - Rule of thumb
        - Video: Rule of Thumb
    - Vertex Compensation Formula
        - Video: calculating vertex distance using formula
- Astigmatism and contact lenses- introductory
- Lacrimal lens
    - On K
    - Steeper than K
    - Flatter than K
- Determining power of spherical lens
    - Video- determining power of spherical lens
    - SAM and FAP
- Spherical equivalent
- Presbyopia
- Transposition review

Module Components

- Lesson 6: Refractive Errors Pertaining to Contact Lenses
- Lesson 6 Quiz
- Lesson 7: Power of a Spherical Rigid Lens

- Lesson 7 Quiz
- Module III Quiz
- Video: Review Hard Concept 2
    - Optical crosses, lens powers, and axis of astigmatism relation
- Video: Exam Tip 2
    - Physiology of the eye is a system
- Progression Quiz: Lessons 1 – 7
- Progression Quiz Review Video: Lessons 1 – 7
    - Video gives rationales to questions

Module IV: Instrumentation, Modification and Verification

The various fitting philosophies of rigid and soft lenses are presented. Although PMMA lenses are rarely fit today, the basic principles of fitting them are fundamental to all rigid lenses and are therefore covered in this section. Methods and procedures for selecting base curve, diameter, optical zone width, peripheral curves, and thickness are covered to include the use of nomograms and diagnostic lenses. Dynamic fluorescein patterns used to assist in the evaluation of the fit of rigid lenses are discussed. Astigmatism with the rule, against the rule, and oblique will be discussed and observed. Soft lens evaluation is then covered to include fitting goals and the characteristics of a good fitting soft lens. This section includes a presentation of rigid and soft lens verification techniques. A description of in-office modifications that are possible with rigid contact lenses is discussed. Included among these are the reduction of lens diameter, blending transition zones, removing scratches, adding minus power, and dotting the lens for identification. The use of the keratometer and slit lamp are described and demonstrated.

Topics Covered

- Keratometer
    - Components
        - Video: demonstration of instrument
    - Functions
    - Step by step process
    - Interpreting and mires
    - K readings
        - Video: understanding K readings
- Arcuate staining
- Digital corneal topography
- Radiuscope
    - Step by step process
- Slit lamp
    - Components

        - Video: demonstration of instrument
    - Angles
        - Video: slit lamp angles
    - Filters
    - Fluorescein patterns
        - Video: ideal pattern, central pooling, central corneal touch
        - Video: with the rule astigmatism, against the rule astigmatism, oblique astigmatism
    - Corneal epithelial staining patterns
    - Fluorescein staining
        - Video: fluorescein staining
        - Epithelial defects
- Rigid lens fitting methods
    - Palpebral lens
    - Larger lens with peripheral curves
    - Trial lens method
    - Dyer chart method
    - Hartstein modification
    - Type, power, and design of rigid lens
    - CARASA
        - Video: determining rigid lens type
- Soft lens fitting methods
    - Fitting goals
    - Characteristics
    - Retinoscope reflexes
    - Fitting soft lenses- 1/3 rule
        - Video: determining soft lens with 1/3 rule
- Contraindications for contact lens wear
- Rigid lens architecture, inspection and verification
- Soft lens architecture, inspection and verification
- In-office modification
    - Video: polishing a lens
    - Video: reducing lens diameter
    - Video: fenestrating a lens

Module Components

- Lesson 8: Keratometer
- Lesson 8 Quiz
- Lesson 9: Digital corneal topographer
- Lesson 9 Quiz

- Lesson 10: Slit Lamp and Angles
- Lesson 10 Quiz
- Lesson 11: Fitting Methods
- Lesson 11 Quiz
- Lesson 12: In-office Modification and Inspection
- Lesson 12 Quiz
- Module IV Quiz
- Video: Review Hard Concept 3
    - Understanding K readings, rigid lenses and lacrimal lens
- Video: Exam Tip 3
    - Don't lose sight of the big picture
- Video: Exam Tip 4
    - Study book (scrapbook)
- Progression Quiz: Lessons 1 – 12
- Progression Quiz Review Video: Lessons 1 – 12
    - Video gives rationales to the questions

Module V: Dispensing and Follow-Up Procedures

This section includes a discussion of the various solutions for rigid and soft lenses. These include wetting, cleaning, and soaking solutions for rigid lenses, and cleaning disinfecting, rinsing, and re-wetting solutions for soft lenses. A description of patient instruction techniques for lens insertion and removal including the patient's role, the fitter's role and the Taco Test are discussed. An overview of wearing schedules is described for PMMA, gas permeable, and soft contact lenses. This section continues with a discussion of the patient adaptation periods and symptoms for soft and rigid lenses, as well as a presentation of adverse reactions and risk-reduction techniques.

Topics Covered

- Advanced fitting techniques
- Ocular motility problems
- Multifocal design contact lenses
    - Patient selection
- Disposable rates and characteristics of each type of lens
- Monovision
- Astigmatism contact lenses
    - Stabilization techniques
    - Lens rotation
    - Patient selection
- Rigid aphakic lenses

- Aphakic soft lenses
- Keratoconus
    - Fleischer ring
    - Treatment with contact lenses
- Scleral lenses
    - Special effect scleral lenses
- Gas permeable flexure problems
- Bandage and therapeutic lenses
- Assessment
    - Evaluations
    - Cautions
    - Adaptations
    - Spectacle blur
    - RSVP
    - SOAP
        - Subjective exam
        - Objective exam
        - Assessment
        - Plan
    - Adverse reactions
    - Surface deposit build up
- Dispensing lenses to patients
    - Insertion and removal techniques
        - Soft vs hard
        - Video: demonstration of I&R
    - Patient education
- Breaking-In Wearing Schedules
- Lens handling and care
- Follow-up visits
    - Schedules
    - Lenses checked for
- Rigid lens care
    - Wetting
    - Storage and soaking
    - Cleaning
- Soft lens care
    - Disinfection
    - Video: hydrogen peroxide solution demonstration
    - Rinsing solutions

- Re-wetting/lubricating solution
- Solution compatibility

Module Components

- Lesson 13: Advanced Fitting Techniques
- Lesson 13 Quiz
- Lesson 14: Assessment
- Lesson 14 Quiz
- Lesson 15: Proper Wear and Handling
- Lesson 15 Quiz
- Lesson 16: Proper care
- Lesson 16 Quiz
- Module V Quiz
- Video: Review Hard Concept 4
  - Dispensing instructions, learn to teach
- Video: Exam Tip 5
  - Use your tools
- Progression Quiz: Lessons 1 – 16
- Progression Quiz Review Video: Lessons 1 – 16
  - Video gives rationales to the questions

Module VI: Laws and Regulations

This section begins with a review of prescription interpretation to cover the required information according to the FTC that needs to be on a prescription for validity. HIPAA is discussed, as well as the protocols for prescription verification. Recalling procedures will be covered, and then the course concludes with the regulating governmental agencies a contact lens fitter should be knowledgeable about.

Topics Covered

- Contact lens prescription interpretation
- Accurately filled prescription sample
- HIPAA privacy rule
- Prescription verification laws
- FDA recall procedure
- HIPAA
  - Privacy Rule
  - Security Rule
  - Administrative Safeguards
  - Unique Identifiers Rule

    - The Enforcement Rule
    - HIPAA violations
- FCLCA
- FTC
- CDC
- OSHA
- ANSI Standards
    - Tolerances
    - Publications
- Shelf life

Module Components

- Lesson 17: Original Prescriber Protocols
- Lesson 17 Quiz
- Lesson 18: Recalling Procedures
- Lesson 18 Quiz
- Lesson 19: Federal Guidelines
- Lesson 19 Quiz
- Module VI Quiz
- Hype Video 2
    - Brain games
- Video: Review Hard Concept 5
    - HIPAA compliance and patient privacy
- Video: Exam Tip 6
    - Catch some zzz's
- Video: Review Hard Concept 6
    - Contact lens applications for presbyopia
- Final Course Glossary

Closing of Contact Lens Course

The concluding section serves to congratulate the student for completing the Contact Lens course. There is a brief recap of the topics covered throughout the course that they should have learned and retained.

Included Media

- Closing of Course Video

Department of Professional and Occupational Regulation

TO: VIRGINIA BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS
FROM: KELLEY SMITH, EXECUTIVE DIRECTOR
SUBJECT: OPTICIAN CURRICULUM CRITERIA
DATE: JUNE 21, 2023

During the Board meeting held on August 17, 2022, the Board discussed the need for a review committee to evaluate curriculums for Related Technical Instruction ("RTI") in opticianry apprenticeships. During the February 27, 2023, review committee meeting, committee members recognized the importance of developing consistent review criteria for RTI programs. Developing specific criteria for reviewing related technical instruction ensures a standardized approach to curriculum development across different educational institutions. It provides clear guidelines to help institutions align their curricula with the objectives and requirements outlined by the Board. The review committee can use these methods to assess the curricula and determine if institutions meet the necessary standards before approval. Criteria development for RTI programs plays a crucial role in maintaining consistency in the content of instruction provided to optician apprentices.

Please review the attached criteria for related technical instruction curriculums. Before proceeding, the Board will need to discuss and approve a Notice of Intended Regulatory Action (NOIRA) to initiate this regulatory process.

To initiate the NOIRA, the Board can adopt a motion stating, "We move to initiate a Notice of Intended Regulatory Action for related technical instruction curriculum criteria."

Project 7596 - NOIRA

DRAFT AGENDA

Board For Hearing Aid Specialists and Opticians

Optician Curriculum Criteria for Related Technical Instruction

18VAC80-30-190. Criteria for Related Technical Instruction.

A. Related Technical Instruction courses for Optician Apprenticeships set out in this chapter shall be approved by the board. Training institutions shall meet the following criteria for related technical instruction.

1. Course Information- The curriculum should, at a minimum, teach to the American Board of Opticianry – National Contact Lens Examiners ("ABO - NCLE") National Opticianry Competency Examination ("NOCE") Content Outline and Test Specifications.

2. Training Material.

a. Course objectives – a listing of the course objectives stated in terms of the skills, knowledge, or aptitude the participant will be able to demonstrate as a result of the instruction;

b. Course description – a detailed description showing the major topics, planned presentation sequence, activities, audio-visual presentations, and other major activities;

c. Required course materials – a list of the name, publisher, and publication date for commercially available publications; or, for reference materials developed by the program or available exclusively through the course, a copy of the reference material to be used by the participant; and

d. Modality of instruction.

3. Evidence satisfactory to the Board that the related technical instruction meets the minimum of 144 hours for each year of the two-year apprenticeship.

4. List of references used in course content development.

5. List of individuals, including qualifications, used in course content development.

6. List of review criteria used to ensure course content is current with ABO-NCLE NOCE Content Outline and Test Specifications.

7. A description of the means that will be used to determine the successful completion of the related technical instruction program by individuals, such as examinations, projects, personal evaluations, or other recognized evaluation techniques.

B. To maintain approval of the program, the curriculum must be submitted to the board for review and approval:

1. Every five (5) years; or

2. Thirty (30) days prior to any substantive changes to the requirements found in subsection A of this section.

In accordance with § 2.2-4002.1 of the Code of Virginia, this proposed guidance document conforms to the definition of a guidance document in § 2.2-4101.

Department of Professional and Occupational Regulation

Board for Barbers and Cosmetology

PROPOSED GUIDANCE DOCUMENT

18 VAC 80-30-20 Approved Related Technical Instruction

Adopted: June 13, 2019
Revised: October 31, 2019
Amended: December 8, 2022
Amended: June 21, 2023
Anticipated Effective Date: August 16, 2023

I. Background

In 2019, the Board for Hearing Aid Specialists and Opticians (the "Board") approved a formal guidance document to include a listing of board approved optician related technical instruction related to registered apprenticeships with the Department of Labor and Industry ("DOLI"). On August 17, 2022, the Board for Hearing Aid Specialists and Opticians updated the guidance document to conform with regulatory changes made in October 2021. The revised language on the related technical instruction component of registered apprenticeships aligned the Board's guidance with the then current practices and requirements of DOLI, which administers registered apprenticeships.

II. Applicable Regulations and Minutes Excerpt

18 VAC 80-30-20. of the Optician Regulations establishes the training option of completion of a registered apprenticeship including all required related technical instruction.

In accordance with § 2.2-4002.1 of the Code of Virginia, this proposed guidance document conforms to the definition of a guidance document in § 2.2-4101.

III. Consideration of Board Policy

At the June 21, 2023 Board meeting, Optical Training Institute was approved as a related technical instruction provider, therefore the 2022 guidance document needs to be revised to reflect the current list of approved related technical instruction as the Ophthalmic Career Progression Program through the National Academy of Opticianry, the Opticians Apprenticeship Career Studies through Reynolds Community College, the Dispensing Optician program through Norfolk Technical Center, and the Optician Development Program through Optical Training Institute.

The Board for Hearing Aid Specialists and Opticians will be taking public comment on this proposed guidance document. A 30-day comment period will begin on July 17, 2023

If you wish to comment on the proposed guidance document, you may do so via the Town Hall website or you may submit written comments so that they are received by August 16, 2023

Kelley Smith, Executive Director
Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400
Richmond, VA 23233
(804) 367-2960
hasopt@dpor.virginia.gov

Department of Professional and Occupational Regulation

Board for Hearing Aid Specialists and Opticians

Revised Effective: August 16, 2023

Guidance Document: 18 VAC 80-30-20 – Approved Related Technical Instruction

Board Regulation 18 VAC 80-30-20.5.b establishes the training option of completion of a registered apprenticeship including all required related technical instruction. The following related technical instruction curriculums are approved by the Board:

Ophthalmic Career Progression Program
National Academy of Opticianry
https://www.nao.org/cpp/

Opticians Apprenticeship Career Studies
Reynolds Community College
http://www.reynolds.edu/_onlinecatalog/current/academic-programs/degreescareer-studies/opticians_apprenticecsc160-04.aspx

Dispensing Optician
Norfolk Technical Center
https://www.npsk12.com/Page/10298

Optician Development Program
Optical Training Institute
https://opticaltraining.com/optician-development-program/

Department of Professional and Occupational Regulation

TO: VIRGINIA BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS
FROM: KELLEY SMITH, EXECUTIVE DIRECTOR
SUBJECT: OPTICIANS STANDARDS OF APPRENTICESHIP
DATE: JUNE 1, 2023

On May 3, 2023, Board staff received an email from the Department of Labor and Industry's (DOLI) Division of Registered Apprenticeship asking for clarification on who may be considered as a mentor/journeyworker to satisfy the 1:1 apprentice to journeyworker ratio as stated in the Mininum Standards, which are attached for your reference.

Currently the standards allow for a licensed optician to be a mentor/journeyworker, but DOLI would like to know if an optometrist could be used as a mentor/journeyworker to allow for the 2:3 apprentice to mentor/journeyworker ratio requirement?

If you agree to this revision, the Addendum's Item 20.b(2), could be amended to say "First (1st) apprentice to the first licensed optician/optometrist; One apprentice to each two licensed opticians/optometrist thereafter."

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation

Ralph S. Northam
Governor

Brian Ball
Secretary of
Commerce and Trade

Jay W. DeBoer
Director

MEMORANDUM

TO: Patricia Morrison, Division Director
Registered Apprenticeship
Department of Labor and Industry

FROM: Stephen Kirschner, Regulatory Operations Administrator
Board for Hearing Aid Specialists and Opticians
Department of Professional and Occupational Regulation

PHONE: 804-367-8590

DATE: April 8, 2019

RE: Optician Standards for Apprenticeship

Enclosed are Minimum Standards for Apprenticeship, Addendum to the Minimum Standards, Work Processes, and the signature page, bearing the signature of Bruce R. Wagner, Chair, Board for Hearing Aid Specialists and Opticians.

Please let me know if you have any questions about the enclosed documents.

VIRGINIA BOARD FOR OPTICIANS
ADDENDUM TO THE MINIMUM STANDARDS OF APPRENTICESHIP

7. CREDIT FOR PREVIOUS EXPERIENCE

a. An applicant for apprenticeship may be allowed credit on the term of the apprenticeship for prior experience earned with a registered sponsor.

c. An apprentice transferring from an approved school of opticianry to the apprenticeship program may be allowed on the job learning credit for training received on the basis of fifteen (15) hours of apprenticeship for each credit hour of school training.

d. An apprentice who was enrolled in the Career and Technical Education Program while in high school may be allowed credit for that portion of time spent on the job.

11. RELATED INSTRUCTION

d. A board approved related instruction program with a minimum of 144 contact hours per year is required for the occupation of opticianry.

14. HOURS OF WORK

a. Time spent in related instruction shall not be considered as hours of work.

20. ADDITIONAL SPONSOR APPRENTICE QUALIFICATIONS

a. Education: Holder of a high school diploma or a certificate of general education from a state approved educational program, or its equivalent.

b. OTHER:

(1) Nothing in these Standards shall be interpreted in a manner inconsistent with existing Virginia Opticianry Statutes.

(2) Number of Apprentices
The ratio of apprentices to licensed optician shall be:

First (1st) apprentice to the first licensed optician
One apprentice to each two licensed opticians thereafter

WORK PROCESSES
OPTICIAN (DISPENSING)
229.361-010

APPROX HOURS

1. Manual Lensometry and Final Inspection — 1250
   Neutralization of sphere, cylinder, axis, prism, add power thickness, lens clock, single vision, bifocal, trifocal, occupational lenses, progressive addition lenses, proper use of PAL layout charts, internal and external lensometer parts, functions and appropriate use.

   Verification of Rx, inspection of frame and lenses, apply state and federal regulations and standards, impact resistance, prescription aligner and axis aligning pliers, vertical and horizontal imbalance, prescribed prism, and slab off.

2. Eyewear Assembly: — 250
   Lens insertion and removal for full plastic mounting, full metal mounting, groove mounting, semi-rimless and rimless mountings, and bench alignment.

3. Frame repair: — 100
   Replacement of nose pads, temple covers, temples, eyewire screws, and spring hinge screws. Hinge repairs, nylon cord restringing. Knowledge of appropriate tools to use.

4. Measurements & Measuring Instruments: — 600
   Distance, intermediate and near interpupillary distances with various instruments, to include at a minimum, millimeter ruler and pupilometer. segment, fitting and optical center heights with millimeter ruler or other measuring devices, pantoscopic tilt, vertex distance and wrap. Frame measurements include A, B, ED, DBL, and temple length.

5. Eyewear fitting, Eyewear Adjusting & Hand Tools — 600
   Visually inspects all necessary areas: bridge fit, temple fit, frame alignment, lash and cheek clearance, vertex distance, pantoscopic tilt, etc. Adjustments to include nose pad angles, temple spread, equaling vertex distance, horizontal alignment, face form, pantoscopic tilt, temple bends and mastoid adjustment. Equipment to include: frame warmer, temple angling pliers, nose pad pliers, snipe nose pliers, single and double padded bracing pliers, three piece mounting pliers, flat round pliers, cutting pliers, and screw drivers.
6. RX Analysis — 600
   a. Compare new Rx to previous Rx, when applicable, to determine the amount of change as an indication of

possible patient adaptive difficulties.

b. Lens Designs and Options: Single vision, bifocal, trifocal, occupational lenses, progressive addition lenses, aspheric, atoric, polarization, A/R treatments, tint, UV, scratch resistance, photochromic, HEV treatments, sport and industrial safety lens options.

c. Lens Material: Ability to recognize appropriate lens Materials based on Rx and product availability. CR-39, polycarbonate, trivex, high index resins, crown glass, high index glass. Material characteristics to include impact resistance, thickness, weight, aberration, and tensile strength.

7. RX Troubleshooting — 350
   a. Frame: Material (weight/allergies), appropriate frame/lens combination.
   b. Lenses: Material, design, and base curve comparisons, assessment of fitting placements.
   c. Rx: Assessment of visual complaint; when to refer.

8. Determining Lifestyle Needs — 250
   Ability to interview consumer and identify variables that may impact the eyewear selection process or recommendations provided. Recognize the need for various absorptive lens treatments, multiple pairs, occupational lens and frame designs, impact resistance, suitable frame styles, and lens materials to meet the consumer's needs (including industrial and recreation needs).

TOTAL HOURS — **4000**

A training video on surfacing has been provided by the Board which shall be administered by the sponsor during the apprenticeship.

SAFETY IS THE FIRST PRIORITY IN ALL APPRENTICESHIP PROGRAMS AND, AS THE SPONSOR'S PRIMARY RESPONSIBILITY, MUST BE TAUGHT AND PRACTICED CONTINUOUSLY IN ALL ON-THE-JOB WORK PROCESSES.

THE MINIMUM STANDARDS FOR APPRENTICESHIP ARE ACCEPTED AND AMEMDMENTS ARE ADPOTED BY THE VIRGINIA BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS:

CHAIRMAN Bruce R Wagner

Bruce R. Wagner

Date: 3-22-2019

REGISTERED WITH THE VIRGINIA DEPARTMENT OF LABOR AND INDUSTRY

COMMISIONER C. Ray Davenport

Date: 4/15/2019

Department of Professional and Occupational Regulation

TO: VIRGINIA BOARD FOR BARBERS AND COSMETOLOGY
FROM: KELLEY SMITH, EXECUTIVE DIRECTOR
SUBJECT: APPRENTICESHIP SUPERVISOR RATIO
DATE: JUNE 16, 2023

Apprenticeships are common training method used by professions under the board. Apprenticeships are on-the-job training programs, where apprentices work alongside licensees to learn the profession in the work environment. The Board currently utilizes Registered Apprenticeships under the Department of Labor and Industry (DOLI) for opticians.

Currently, the Board requires that, under the DOLI registered apprenticeships, there is one apprentice to the first licensed optician and one apprentice to each two licensed opticians thereafter. Functionally, that means there must be one licensee supervising each apprentice and a 2 apprentice to 3 licensed opticians thereafter. For several other professions, the numbers are reversed, and each licensee may supervise two apprentices.

We have received a request from DOLI to amend the optician apprenticeship ratios to mimic other professions and be each licensee may supervise two apprentices. For other professions, there has not been any evidence that the less stringent requirement of two apprentices for every supervisor has resulted in poor training. We have not received any safety related complaints relating to this requirement.

Staff are requesting the Board consider easing the DOLI apprenticeship supervisor requirements. The Board could consider reducing the apprentice/supervisor requirement to two apprentices for every one supervisor. Please come prepared to discuss this issue at the meeting.

Department of Professional and Occupational Regulation

TO: VIRGINIA BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS
FROM: KELLEY SMITH, EXECUTIVE DIRECTOR
SUBJECT: AMENDMENT TO EXPANDED TRAINING OPTIONS FOR APPLICANTS PROPROSED REGUATIONS
DATE: JUNE 6, 2023

The Board started a regulatory amendment in April 2021 that reevaluated its current Hearing Aid Specialist Regulations ("Regulations") regarding entry into the profession to ensure that they are as least intrusive and burdensome as possible, while still protecting the health, safety, and welfare of the public. The Board sought to create an additional method of qualifying for the license: registered apprenticeship and sought several revisions to its temporary permit rules to improve the success rate of that training method. One of these revisions to the temporary permit rules prohibited referral of a temporary permit holder for testing until they had completed at least nine months of training under their permit.

During the regulatory process, the Board was asked to consider changing the proposed regulatory language of holding a temporary permit for nine-months in order to test to a six-month requirement. Staff is asking the Board to come prepared to discuss the time period in which an individual must hold a temporary permit holder in order to take an examination.

If the Board wishes to adopt the change to the current proposed regulation, it can do so with a motion to modify the length of time an individual must hold a temporary permit from nine-months to six-months.

18VAC80-20-30 <u>Basic qualifications for licensure</u>

A. Every applicant for a license shall provide information on his application establishing that:

1. The applicant is at least 18 years of age.

2. The applicant has successfully completed high school or a high school equivalency course.

3. The applicant has training and experience that covers the following subjects as they pertain to hearing aid fitting and the sale of hearing aids, accessories, and services:

a. Basic physics of sound;

b. Basic maintenance and repair of hearing aids;

c. The anatomy and physiology of the ear;

d. Introduction to psychological aspects of hearing loss;

e. The function of hearing aids and amplification;

f. Visible disorders of the ear requiring medical referrals;

g. Practical tests utilized for selection or modification of hearing aids;

h. Pure tone audiometry, including air conduction, bone conduction, and related tests;

i. Live voice or recorded voice speech audiometry, including speech reception threshold testing and speech discrimination testing;

j. Masking when indicated;

k. Recording and evaluating audiograms and speech audiometry to determine the proper selection and adaptation of hearing aids;

l. Taking earmold impressions;

m. Proper earmold selection;

n. Adequate instruction in proper hearing aid orientation;

o. Necessity of proper procedures in after-fitting checkup; and

p. Availability of social service resources and other special resources for the hearing impaired.

4. The applicant has provided one of the following as verification of completion of training and experience as described in subdivision 3 of this subsection:

a. A statement on a form provided by the board signed by the licensed sponsor certifying that the requirements have been met and the applicant has at least nine months of experience under the temporary permit; or

b. A certified true copy of a transcript of courses completed at an accredited college or university, or other notarized documentation of completion of the required experience and training; or

c. An apprenticeship completion form from the Virginia Department of Labor and Industry reflecting completion of a registered apprenticeship, including all required related instruction or an equivalent out-of-state registered apprenticeship.

5. The applicant has not been convicted or found guilty of any crime directly related to the practice of fitting or dealing in hearing aids, regardless of the manner of adjudication, in any jurisdiction of the United States. Except for misdemeanor convictions that occurred five or more years prior to the date of application, with no subsequent convictions, all criminal convictions shall be considered as part of the totality of the circumstances of each applicant. The applicant review of prior convictions shall be subject to the requirements of § 54.1-204 of the Code of Virginia. Any plea of nolo contendere shall be considered a conviction for purposes of this subdivision. The record of a conviction authenticated in such form as to be admissible in evidence under the laws of the jurisdiction where convicted shall be admissible as prima facie evidence of such conviction or guilt.

6. The applicant is in good standing as a licensed hearing aid specialist in every jurisdiction where licensed. The applicant must disclose if he has had a license as a hearing aid specialist that was suspended, revoked, or surrendered in connection with a disciplinary action or that has been the subject of discipline in any jurisdiction prior to applying for licensure in Virginia. At the time of application for licensure, the applicant must also disclose any disciplinary action taken in another jurisdiction in connection with the applicant's practice as a hearing aid specialist. The applicant must also disclose whether he has been previously licensed in Virginia as a hearing aid specialist.

7. The applicant has disclosed his physical address. A post office box is not acceptable.

8. The nonresident applicant for a license has filed and maintained with the department an irrevocable consent for the department to serve as service agent for all actions filed in any court in Virginia.

9. The applicant has submitted the required application with the proper fee as referenced in 18VAC80-20-70 and signed, as part of the application, a statement that the applicant has read and understands Chapter 15 (§ 54.1-1500 et seq.) of Title 54.1 of the Code of Virginia and this chapter.

B. The board may make further inquiries and investigations with respect to the qualifications of the applicant or require a personal interview or both. The board may refuse initial licensure due to the applicant's failure to comply with entry requirements. The licensee is entitled to a review of such action. Appeals from such actions shall be in accordance with the provisions of the Administrative Process Act, Chapter 40 (§ 2.2-4000 et seq.) of Title 2.2 of the Code of Virginia.

18VAC80-20-40 Temporary permit

A. Any individual may apply for a temporary permit, which is to be used solely for the purpose of gaining the training and experience required to become a licensed hearing aid specialist in Virginia. The licensed sponsor shall be identified on the application for a temporary permit and the licensed sponsor shall comply strictly with the provisions of subdivisions B 1 and B 2 of this section.

1. A temporary permit shall be issued for a period of ~~12 months and may be extended once for not longer than six months~~ 18 months. After a period of 18 months ~~an extension is no longer possible and,~~ the former temporary permit holder shall sit for the examination in accordance with this section.

2. The board may, at its discretion, extend the temporary permit for a temporary permit holder who suffers serious personal illness or injury, or death in his immediate family, or obligation of military service or service in the Peace Corps, or for other good cause of similar magnitude approved by the board. Documentation of these circumstances must be received by the board no later than 12 months after the date of the expiration of the temporary permit or within six months of the completion of military or Peace Corps service, whichever is later.

B. Every applicant for a temporary permit shall provide information upon application establishing that:

1. The applicant for a temporary permit is at least 18 years of age.

2. The applicant for a temporary permit has successfully completed high school or a high school equivalency course.

3. The applicant has not been convicted or found guilty of any crime directly related to the practice of fitting or dealing in hearing aids, regardless of the manner of adjudication, in any jurisdiction of the United States. Except for misdemeanor convictions that occurred five or more years prior to the date of application, with no subsequent convictions, all criminal convictions shall be considered as part of the totality of the circumstances of each applicant. Review of prior convictions shall be subject to the requirements of § 54.1-204 of the Code of Virginia. Any plea of nolo contendere shall be considered a conviction for purposes of this subdivision. The record of a conviction authenticated in such form as to be admissible in evidence under the laws of the jurisdiction where convicted shall be admissible as prima facie evidence of such conviction or guilt.

4. The applicant for a temporary permit is in good standing as a licensed hearing aid specialist in every jurisdiction where licensed. The applicant for a temporary permit must disclose if he has had a license as a hearing aid specialist that was suspended, revoked, or surrendered in connection with a disciplinary action or that has been the subject of discipline in any jurisdiction prior to applying for licensure in Virginia. At the time of application, the applicant for a temporary permit must also disclose any disciplinary action taken in another jurisdiction in connection with the applicant's practice as a hearing aid specialist. The applicant for a temporary permit must also disclose whether he has been licensed previously in Virginia as a hearing aid specialist.

5. The applicant for a temporary permit has disclosed his physical address. A post office box is not acceptable.

6. The applicant for a temporary permit has submitted the required application with the proper fee referenced in 18VAC80-20-70 and has signed, as part of the application, a statement that the applicant has read and understands Chapter 15 (§ 54.1-1500 et seq.) of Title 54.1 of the Code of Virginia and this chapter.

C. The licensed hearing aid specialist who agrees to sponsor the applicant for a temporary permit shall certify on the application that as sponsor, he:

1. Assumes full responsibility for the competence and proper conduct of the temporary permit holder with regard to all acts performed pursuant to the acquisition of training and experience in the fitting or dealing of hearing aids;

2. Will not assign the temporary permit holder to carry out independent field work without on-site direct supervision by the sponsor until the temporary permit holder is adequately trained for such activity;

3. Will personally provide and make available documentation, upon request by the board or its representative, showing the number of hours that direct supervision has occurred throughout the period of the temporary permit; and

4. Will return the temporary permit to the department should the training program be discontinued for any reason.

5. Will not refer the temporary permit holder for testing until they have completed at least nine months of training under their permit.

D. The licensed sponsor shall provide training and shall ensure that the temporary permit holder under his supervision gains experience that covers the following subjects as they pertain to hearing aid fitting and the sale of hearing aids, accessories, and services:

1. Basic physics of sound;

2. Basic maintenance and repair of hearing aids;

3. The anatomy and physiology of the ear;

4. Introduction to psychological aspects of hearing loss;

5. The function of hearing aids and amplification;

6. Visible disorders of the ear requiring medical referrals;

7. Practical tests utilized for selection or modification of hearing aids;

8. Pure tone audiometry, including air conduction, bone conduction, and related tests;

9. Live voice or recorded voice speech audiometry, including speech reception threshold testing and speech discrimination testing;

10. Masking when indicated;

11. Recording and evaluating audiograms and speech audiometry to determine the proper selection and adaptation of hearing aids;

12. Taking earmold impressions;

13. Proper earmold selection;

14. Adequate instruction in proper hearing aid orientation;

15. Necessity of proper procedures in after-fitting checkup; and

16. Availability of social service resources and other special resources for the hearing impaired.

E. The board may make further inquiries and investigations with respect to the qualifications of the applicant for a temporary permit or require a personal interview, or both.

F. All correspondence from the board to the temporary permit holder not otherwise exempt from disclosure, shall be addressed to both the temporary permit holder and the licensed sponsor and shall be sent to the business address of the licensed sponsor.

Project 6712 - Proposed

Board For Hearing Aid Specialists And Opticians

Amendment to Expand Training Options for Applicants

Chapter 20

Board for Hearing Aid Specialists Regulations

18VAC80-20-30. Basic qualifications for licensure.

A. Every applicant for a license shall provide information on his application establishing that:

1. The applicant is at least 18 years of age.

2. The applicant has successfully completed high school or a high school equivalency course.

3. The applicant has training and experience that covers the following subjects as they pertain to hearing aid fitting and the sale of hearing aids, accessories, and services:

a. Basic physics of sound;

b. Basic maintenance and repair of hearing aids;

c. The anatomy and physiology of the ear;

d. Introduction to psychological aspects of hearing loss;

e. The function of hearing aids and amplification;

f. Visible disorders of the ear requiring medical referrals;

g. Practical tests utilized for selection or modification of hearing aids;

h. Pure tone audiometry, including air conduction, bone conduction, and related tests;

i. Live voice or recorded voice speech audiometry, including speech reception threshold testing and speech discrimination testing;

j. Masking when indicated;

k. Recording and evaluating audiograms and speech audiometry to determine the proper selection and adaptation of hearing aids;

l. Taking earmold impressions;

m. Proper earmold selection;

n. Adequate instruction in proper hearing aid orientation;

o. Necessity of proper procedures in after-fitting checkup; and

p. Availability of social service resources and other special resources for the hearing impaired.

4. The applicant has provided one of the following as verification of completion of training and experience as described in subdivision 3 of this subsection:

a. A statement on a form provided by the board signed by the licensed sponsor certifying that the requirements have been met and the applicant has at least nine months of experience under the temporary permit; or

b. A certified true copy of a transcript of courses completed at an accredited college or university, or other notarized documentation of completion of the required experience and training; or

c. An apprenticeship completion form from the Virginia Department of Labor and Industry reflecting completion of a registered apprenticeship, including all required related instruction or an equivalent out-of-state registered apprenticeship.

5. The applicant has not been convicted or found guilty of any crime directly related to the practice of fitting or dealing in hearing aids, regardless of the manner of adjudication, in any jurisdiction of the United States. Except for misdemeanor convictions that occurred five or more years prior to the date of application, with no subsequent convictions, all criminal convictions shall be considered as part of the totality of the circumstances of each applicant. The applicant review of prior convictions shall be subject to the requirements of § 54.1-204 of the Code of Virginia. Any plea of nolo contendere shall be considered a conviction for purposes of this subdivision. The record of a conviction authenticated in such form as to be admissible in evidence under the laws of the jurisdiction where convicted shall be admissible as prima facie evidence of such conviction or guilt.

6. The applicant is in good standing as a licensed hearing aid specialist in every jurisdiction where

licensed. The applicant must disclose if he has had a license as a hearing aid specialist that was suspended, revoked, or surrendered in connection with a disciplinary action or that has been the subject of discipline in any jurisdiction prior to applying for licensure in Virginia. At the time of application for licensure, the applicant must also disclose any disciplinary action taken in another jurisdiction in connection with the applicant's practice as a hearing aid specialist. The applicant must also disclose whether he has been previously licensed in Virginia as a hearing aid specialist.

7. The applicant has disclosed his physical address. A post office box is not acceptable.

8. The nonresident applicant for a license has filed and maintained with the department an irrevocable consent for the department to serve as service agent for all actions filed in any court in Virginia.

9. The applicant has submitted the required application with the proper fee as referenced in 18VAC80-20-70 and signed, as part of the application, a statement that the applicant has read and understands Chapter 15 (§ 54.1-1500 et seq.) of Title 54.1 of the Code of Virginia and this chapter.

B. The board may make further inquiries and investigations with respect to the qualifications of the applicant or require a personal interview or both. The board may refuse initial licensure due to the applicant's failure to comply with entry requirements. The licensee is entitled to a review of such action. Appeals from such actions shall be in accordance with the provisions of the Administrative Process Act, Chapter 40 (§ 2.2-4000 et seq.) of Title 2.2 of the Code of Virginia.

18VAC80-20-40. Temporary permit.

A. Any individual may apply for a temporary permit, which is to be used solely for the purpose of gaining the training and experience required to become a licensed hearing aid specialist in Virginia. The licensed sponsor shall be identified on the application for a temporary permit and the licensed sponsor shall comply strictly with the provisions of subdivisions B 1 and B 2 of this section.

1. A temporary permit shall be issued for a period of ~~12 months and may be extended once for not longer than six months~~ 18 months. After a period of 18 months ~~an extension is no longer possible and,~~ the former temporary permit holder shall sit for the examination in accordance with this section.

2. The board may, at its discretion, extend the temporary permit for a temporary permit holder who suffers serious personal illness or injury, or death in his immediate family, or obligation of military service or service in the Peace Corps, or for other good cause of similar magnitude approved by the board. Documentation of these circumstances must be received by the board no later than 12 months after the date of the expiration of the temporary permit or within six months of the completion of military or Peace Corps service, whichever is later.

B. Every applicant for a temporary permit shall provide information upon application establishing that:

1. The applicant for a temporary permit is at least 18 years of age.

2. The applicant for a temporary permit has successfully completed high school or a high school equivalency course.

3. The applicant has not been convicted or found guilty of any crime directly related to the practice of fitting or dealing in hearing aids, regardless of the manner of adjudication, in any jurisdiction of the United States. Except for misdemeanor convictions that occurred five or more years prior to the date of application, with no subsequent convictions, all criminal convictions shall be considered as part of the totality of the circumstances of each applicant. Review of prior convictions shall be subject to the requirements of § 54.1-204 of the Code of Virginia. Any plea of nolo contendere shall be considered a conviction for purposes of this subdivision. The record of a conviction authenticated in such form as to be admissible in evidence under the laws of the jurisdiction where convicted shall be admissible as prima facie evidence of such conviction or guilt.

4. The applicant for a temporary permit is in good standing as a licensed hearing aid specialist in every jurisdiction where licensed. The applicant for a temporary permit must disclose if he has had a license as a hearing aid specialist that was suspended, revoked, or surrendered in connection with a disciplinary action or that has been the subject of discipline in any jurisdiction prior to applying for licensure in Virginia. At the time of application, the applicant for a temporary permit must also disclose any disciplinary action taken in another jurisdiction in connection with the applicant's practice as a hearing aid specialist. The applicant for a temporary permit must also disclose whether he has been licensed previously in Virginia as a hearing aid specialist.

5. The applicant for a temporary permit has disclosed his physical address. A post office box is not acceptable.

6. The applicant for a temporary permit has submitted the required application with the proper fee referenced in 18VAC80-20-70 and has signed, as part of the application, a statement that the applicant has read and understands Chapter 15 (§ 54.1-1500 et seq.) of Title 54.1 of the Code of Virginia and this chapter.

C. The licensed hearing aid specialist who agrees to sponsor the applicant for a temporary permit shall certify on the application that as sponsor, he:

1. Assumes full responsibility for the competence and proper conduct of the temporary permit holder with regard to all acts performed pursuant to the acquisition of training and experience in the fitting or dealing of hearing aids;

2. Will not assign the temporary permit holder to carry out independent field work without on-site direct supervision by the sponsor until the temporary permit holder is adequately trained for such activity;

3. Will personally provide and make available documentation, upon request by the board or its representative, showing the number of hours that direct supervision has occurred throughout the period of the temporary permit; and

4. Will return the temporary permit to the department should the training program be discontinued for any reason.

5. Will not refer the temporary permit holder for testing until they have completed at least nine months of training under their permit.

D. The licensed sponsor shall provide training and shall ensure that the temporary permit holder under his supervision gains experience that covers the following subjects as they pertain to hearing aid fitting and the sale of hearing aids, accessories, and services:

1. Basic physics of sound;

2. Basic maintenance and repair of hearing aids;

3. The anatomy and physiology of the ear;

4. Introduction to psychological aspects of hearing loss;

5. The function of hearing aids and amplification;

6. Visible disorders of the ear requiring medical referrals;

7. Practical tests utilized for selection or modification of hearing aids;

8. Pure tone audiometry, including air conduction, bone conduction, and related tests;

9. Live voice or recorded voice speech audiometry, including speech reception threshold testing and speech discrimination testing;

10. Masking when indicated;

11. Recording and evaluating audiograms and speech audiometry to determine the proper selection and adaptation of hearing aids;

12. Taking earmold impressions;

13. Proper earmold selection;

14. Adequate instruction in proper hearing aid orientation;

15. Necessity of proper procedures in after-fitting checkup; and

16. Availability of social service resources and other special resources for the hearing impaired.

E. The board may make further inquiries and investigations with respect to the qualifications of the applicant for a temporary permit or require a personal interview, or both.

F. All correspondence from the board to the temporary permit holder not otherwise exempt from disclosure, shall be addressed to both the temporary permit holder and the licensed sponsor and shall be sent to the business address of the licensed sponsor.

Department of Professional and Occupational Regulation

TO: VIRGINIA BOARD FOR HEARING AID SPECIALISTS AND OPTICIANS
FROM: KELLEY SMITH, EXECUTIVE DIRECTOR
SUBJECT: FINANCIAL STATEMENTS
DATE: JUNE 6, 2023

Attached you will find the most recent Statement of Financial Activity and the Supporting Statement of Year-to-Date Activity for the Board. Additionally, you will find the Agency Statement of Financial Activity.

Department of Professional and Occupational Regulation
Statement of Financial Activity

Board for Hearing Aid Specialists and Opticians
954240

2022-2024 Biennium **April 2023**

	April 2023 Activity	Biennium-to-Date Comparison	
		July 2020 - April 2021	July 2022 - April 2023
Cash/Revenue Balance Brought Forward			0
Revenues	4,860	146,430	140,995
Cumulative Revenues			140,995
Cost Categories:			
Board Expenditures	781	16,070	18,860
Board Administration	1,880	32,301	33,536
Administration of Exams	33	18,434	1,113
Enforcement	19	365	401
Legal Services	0	380	336
Information Systems	2,101	22,462	19,302
Facilities and Support Services	706	12,296	7,633
Agency Administration	1,122	14,833	22,448
Other / Transfers	0	0	(31)
Total Expenses	6,642	117,142	103,597
Transfer To/(From) Cash Reserves	(117)	0	(15,409)
Ending Cash/Revenue Balance			52,806

Cash Reserve Beginning Balance	(60,694)	0	(45,402)
Change in Cash Reserve	(117)	0	(15,409)
Ending Cash Reserve Balance	(60,810)	0	(60,810)

Number of Regulants

Current Month	2,522
Previous Biennium-to-Date	2,575

Department of Professional and Occupational Regulation

Supporting Statement of Year-to-Date Activity

Agency Total
Fiscal Year 2023

DRAFT AGENDA

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Fiscal YTD Charges	Planned Annual Charges	Current Balance	Projected Charges at 6/30	Projected Variance Favorable (Unfavorable) Amount	%
Board Expenditures	240,785	135,356	115,811	155,623	171,445	229,739	100,781	165,674	202,094	117,076	0	0	1,634,383	2,289,682	655,299	1,909,917	379,765	16.6%
Board Administration	581,962	397,550	386,885	206,213	374,175	637,198	202,327	368,946	569,064	231,327	0	0	3,955,647	6,091,507	2,135,860	4,459,904	1,631,603	26.8%
Administration of Exams	39,210	27,084	28,416	13,874	27,042	43,638	13,540	29,679	20,113	7,412	0	0	250,008	376,174	126,166	281,716	94,458	25.1%
Enforcement	939,715	669,917	661,520	319,077	328,847	1,018,842	325,761	587,085	880,748	321,260	0	0	6,052,774	9,088,134	3,035,360	6,860,204	2,227,930	24.5%
Legal Services	0	0	25,540	10,492	50	200	106,047	46,602	46,702	11,535	0	0	247,166	271,314	24,148	296,599	-25,285	-9.3%
Information Systems	162,794	258,278	199,371	143,010	237,968	213,873	237,573	369,229	269,729	265,065	0	0	2,356,891	3,235,048	878,157	2,762,187	472,861	14.6%
Facilities / Support Svcs	108,265	178,693	150,000	128,795	169,087	179,095	141,202	172,015	181,953	161,688	0	0	1,570,793	2,311,417	740,624	1,847,849	463,568	20.1%
Agency Administration	297,208	210,026	420,127	207,803	277,270	384,521	120,869	246,587	406,887	141,515	0	0	2,712,813	3,869,797	1,156,984	3,097,046	772,751	20.0%
Other / Transfers	0	0	0	0	0	0	-3,850	0	0	0	0	0	-3,850	0	3,850	-4,620	4,620	
Total Charges	**2,369,938**	**1,876,905**	**1,987,671**	**1,184,886**	**1,585,885**	**2,707,106**	**1,244,250**	**1,985,817**	**2,577,289**	**1,256,877**	**0**	**0**	**18,776,624**	**27,533,073**	**8,756,449**	**21,510,802**	**6,022,271**	**21.9%**

Department of Professional and Occupational Regulation
Statement of Financial Activity

Agency Total

2022-2024 Biennium **April 2023**

	April 2023 Activity	Biennium-to-Date Comparison	
		July 2020 - April 2021	July 2022 - April 2023
Cash/Revenue Balance Brought Forward			3,453,476
Revenues	1,569,104	17,040,094	16,735,724
Cumulative Revenues			20,189,200
Cost Categories:			
Board Expenditures	117,076	1,391,768	1,634,383
Board Administration	231,327	3,684,101	3,955,647
Administration of Exams	7,412	247,162	250,008
Enforcement	321,260	5,585,852	6,052,774
Legal Services	11,535	198,307	247,166
Information Systems	265,065	2,629,063	2,356,891
Facilities and Support Services	161,688	1,600,478	1,570,793
Agency Administration	141,515	1,734,201	2,712,813
Other / Transfers	0	0	(3,850)
Total Expenses	1,256,877	17,070,932	18,776,624
Transfer To/(From) Cash Reserves	(19,264)	0	(1,330,146)
Ending Cash/Revenue Balance			2,742,722

Cash Reserve Beginning Balance	16,683,068	0	17,993,950
Change in Cash Reserve	(19,264)	0	(1,330,146)
Ending Cash Reserve Balance	16,663,805	0	16,663,805

Number of Regulants

Current Month	321,518
Previous Biennium-to-Date	308,696