

UABSO Professional Program 2016-2017 Course Descriptions (updated January, 2017)

Year	Semester	Course Number	Course Title	Instructor	Course Description
1	Fall	OBHS 111	Fundamentals in Dentistry and Optometry 1 (weeks 1-8)	Hardy	<p>Fundamentals 1 is a multi-track, basic science course that primarily teaches the biochemical, genetic and immunological principles of human biology. The course begins with a general explanation of <u>human histological composition</u> (histology track) as a preliminary orientation for <u>biochemistry</u> (i. e., to indicate where biochemical reactions take place). The biochemistry track will demonstrate the principal kinds of molecules found in human cells and tissues and how these molecules function to carry out life processes and maintain cell and tissue structures. This track will reveal the nature of proteins, carbohydrates, lipids and nucleic acids. Within the subject of proteins, for example, will be included amino acid building blocks, peptide bonds, examples of proteins such as the collagens and hemoglobin as well as protein catalysts known as enzymes. There will also be included those metabolic processes that form and degrade classes of molecules and how metabolism itself acts as a mechanism for cellular energy. There is integrated within the biochemistry track, a physiology track of essential membrane function and transport. The course is continued with a description of how cells renew themselves (nucleic acid functions) and carry out integrated communication (hormone and neurotransmitter functions). A genetics track follows that shows the principles and functions of inheritance and its problems. The course is concluded with a thorough examination of <u>immunology</u>. This track includes both molecular and cellular mechanisms of immune functions such as: the immunoglobulins, antibody response, natural killer cells, T-cells and immune responses to infection.</p>
1	Fall	OPT 111	Introduction to Optometry	Nichols, K	<p>The optometrist must work within the health care system in order to fulfill the responsibility of delivering quality, accessible and comprehensive eye and vision care services. This requires a knowledge base of optometric diagnostic and therapeutic elements and a comprehensive understanding of the role of the optometrist in current and evolving health care system. The Introduction to Optometry course is designed to acquaint the student with the organization of optometry, the health care delivery system, and to provide a foundation of the evolution of the profession of optometry including its history, socio-economic, ethical and legal elements. In addition, the course will develop an understanding of several components of the discipline of optometry and the responsibility optometry holds in relation to the health of the greater community.</p> <p>Course Objectives: following the completion of this course, the student will be able to recognize and describe how census data can influence selection of optometry practice setting; define terms and organizations (AOA, AAO, ASCO, etc.) related to optometry, public health and the U.S. health care system; discuss the history and philosophy of the profession of optometry; discuss the socioeconomic and legal aspects of U.S. health care and of the optometric profession; characterize the roles of the optometrist and the profession of optometry in American health care; understand the concepts of community volunteerism and global eye care; define and describe the major terms and concepts is biostatistics and epidemiology; describe the major components in reviewing an abstract and learn about journal differences; describe the nature of professions, professional behavior, and professionalism; and identify principles of ethics that apply to health care, describe the process of ethical decision-making, and recognize significant ethical issues in optometric clinical care and public health practice.</p>

Year	Semester	Course Number	Course Title	Instructor	Course Description
1	Fall	OPT 112	Geometric and Clinical Optics	Gordon	The first part of the course will introduce the subject of geometric optics. This portion begins with basic concepts of light, refraction, and reflection, which then leads to the properties of lenses, mirrors, and prisms. Light rays are used to illustrate how optical elements interact with and “bend” incoming light. The bending of light rays is quantified using the concept of “vergence.” You will learn how images are formed, whether they are real or virtual, and magnified or minified. The correction of myopia and hyperopia with spectacle lenses and contact lenses will be described. We will introduce refraction through multiple lens systems, since the eye is a multi-element refracting system, as are most clinical instruments. The properties of cylinders and spherocylindrical lenses will be introduced, since this is important in the clinical correction of astigmatism. The course will also introduce magnifying devices, such as telescopes, hand magnifiers, and stand magnifiers. These devices are used to improve visual functioning of patients with central vision loss (“low vision”) from age-related macular degeneration, glaucoma, and other diseases. The second part of the course, clinical optics, will introduce the clinical aspects of ophthalmic lenses and optical dispensing. The refractive, prismatic, and magnification effects of ophthalmic lenses will be covered in detail. The laboratory section emphasizes proficiency using the lensometer and other instruments to measure single vision, bifocal, and trifocal lenses. Clinical procedures for fitting spectacle lenses are introduced. Several lab sessions take place in the Optical Services department on the clinic floor. These sessions are designed to introduce you to clinical aspects of frame and lens selection and standard optical measurements for single vision, bifocal, and trifocal lenses. Progressive addition lenses are covered in a later course, Ophthalmic Materials.
1	Fall	OPVS 111	Basic Science and Clinical Optometry	Laurent	The mission of the Basic Science and Clinical Optometry course is to demonstrate the importance of the basic science courses by showing connections between clinical optometric conditions and the underlying basic sciences. At the conclusion of the course, the student should be able to: Recognize the relationship between the basic sciences and clinical optometry and Appreciate the necessity for a doctor of optometry to understand the basic science underlying clinical conditions, tests, and treatments.
1	Fall	VS 111	Ocular Anatomy	Kraft	In this 15 week course you will partake of a guided tour of the microscopic and macroscopic anatomy of the eye and orbit. While learning the names, places, sizes and development you will acquire working knowledge of well over 1000 new vocabulary words from the worlds of Ophthalmology and Optometry. To spice things up some hands on labs are offered, and we will scratch the surface of ocular pathologies.
1	Fall	VS 112	Physiology of the Eye	Gorbatyuk	This course has been designed to provide students with the current understanding of the field of ocular physiology. This course, although distinct from the general physiology, emphasizes how the ocular physiology is unique and at the same time similar to physiology of non-ocular tissues. Although this course is designed from the point of view of contemporary understanding of different concepts of ocular physiology, a prior understanding of general physiology will help. The materials covered in this course will lead to understanding of extensive current concepts regarding interdependence of the physiology of different ocular tissues, and the importance of research utilizing animal models in the evolution of the current understanding of the human ocular physiology.
1	Fall	VS 113	Biochemistry of the Eye	Gross/Pittler	Biochemistry and molecular biology have been the most rapidly developing areas of medical science in the past 40 years. Ocular biochemistry as a sub-specialty is growing at an equal pace—that is why this area holds importance for eye doctors. Ocular biochemistry includes the structures and metabolism of ocular tissues and fluids as well as important research and clinical applications in the field. This course will contain lectures on significant chemical reactions in the eye and how those reactions are related to normal and pathological ocular functions. Developments in the areas of basic and clinical research will also be examined with relationships to the diagnoses and treatment of patients.

Year	Semester	Course Number	Course Title	Instructor	Course Description
1	Fall	OBHS 112	Fundamentals in Dentistry and Optometry 2 (weeks 9-16)	Hardy	Fundamentals II introduces the disciplines of microbiology, histology, pathology and pharmacology. This course gives one the basic knowledge that is necessary to begin studies of the human organs systems. <u>Microbiology</u> studies the nature and characteristics of small organisms (such as bacteria and viruses) that invade human cells for their own gain. Lectures in <u>histology</u> will act as a preparatory introduction to pathology and enables one to determine the normal structures of tissues. <u>Pathology</u> describes the effects that are produced on human tissues when under attack by microorganisms and other destructive forces, as well as the abnormal growth and functions that may be brought about by genetic aberrations. <u>Pharmacology</u> involves the study and use of reagents and devices (drugs) to correct and control pathological processes in the body.
1	Spring	OBHS 121	Systems 1: Neuroscience (weeks 1-8)	Parpura	<p>The course provides the Optometry student with a balanced basic science view of the structure and function of the nervous system. The course is designed to prepare students for future clinical courses and provide them with a working knowledge of the structure and function of the nervous system with perspectives that range from molecular to behavioral. The inclusion of relevant clinical correlations is designed to facilitate the students' understanding of the function of the normal nervous system and to provide an introduction to the clinical neurosciences.</p> <p>Course Objectives: students will be able to describe and relate the structure and function of the normal mature and developing nervous system: identify the basic cellular and molecular processes of neurons and glia; describe the functional organization of the pathways in the nervous system that mediate sensory input, central integration and decision-making and motor output; form an integrated understanding of normal and abnormal behavior based on molecular, cellular and systems neuroscience; recognize the genetic and environmental mechanisms that control the normal development of the nervous system and regulate the response of the nervous system to injury or disease.</p> <p>Course Description: the course will consist of: didactic basic neuroscience and neuroanatomy lectures; neurological and psychiatric clinical correlations; Virtual and Gross neuroanatomy labs.</p>
1	Spring	OBHS 122	Systems 2: Gross Anatomy (weeks 1 - 11)	Resuehr	<p>The aim of this course is to provide a solid foundation for understanding human gross anatomy with emphasis on the head and neck. The study of head and neck anatomy provides a considerable intellectual challenge because here we are dealing with a large amount of very small but equally important structures. The regular format will be a lecture in the lecture hall followed by dissection in the anatomy lab. To prepare for the dissections, you will have to read the dissector prior to lab. Each dissection lab will also be accompanied by 10-15 min short video podcasts (vodcasts, or Anatomy-Podcasts) of PowerPoint presentations. Students will also will have access to a prosection of relevant structures, which may serve as a template. Upon completion of the course, you should have a solid understanding of the anatomical structures we have encountered in addition to having learned many aspects of relevant clinical anatomy.</p> <p>Lecture topics: Vertebral column, Introduction to the ANS, Posterior Triangle of the Neck, dissection overview: posterior triangle; Triangles of the neck; Dissection overview: anterior triangle; root of the neck and cervical viscera; dissection overview: thyroid and root of the neck; face and parotid gland; dissection overview: face and parotid; dissection overview: temporal and infratemporal fossae; dissection overview: cranial cavity; cranial nerves; cranial cavity & skull; dissection overview: orbit; orbit and extraocular muscles; dissection overview: nose and nasal cavity; pterygopalatine fossa video tutorial. Lab topics: vertebral column, spinal cord & spinal nerves, suboccipital region (study vertebrae, models and prosections); posterior triangle of the neck; anterior triangle of neck; root of neck and cervical viscera; face and parotid gland; temporal region and infratemporal fossa; cranial cavity (brains have been removed); orbit ; nose and nasal cavity (bisection).</p>

Year	Semester	Course Number	Course Title	Instructor	Course Description
1	Spring	OBHS 123	Systems 3: Cardiovascular and Respiratory (weeks 11-16)	Smith	<p>Cardiovascular: each student will demonstrate an understanding of the normal anatomical structures of the circulatory system and heart, their relationships to each other, and their function; demonstrate an understanding of the normal histologic organization and function of the cardiovascular system, including the heart, arteries, capillaries, veins, and lymphatic vessels; demonstrate an understanding of normal cardiovascular physiology and the ability to apply this knowledge of cardiovascular physiology to explain the underlying pathophysiology of disease states of the cardiovascular system; demonstrate an understanding of the various disease states of the cardiovascular system, such as angina, atherosclerosis, hypertension, and heart failure, including the pathology, pathophysiology and pharmacological and interventional treatment of these diseases.</p> <p>Respiratory: each student will demonstrate an understanding of the normal anatomical organization of the structures composing the respiratory system and the function of these structures; demonstrate an understanding of the normal organization and function of the respiratory system at the cellular and tissue level; demonstrate an understanding of normal respiratory physiology and the ability to apply this knowledge of respiratory physiology to explain the underlying pathophysiology of diseases of the respiratory system; demonstrate an understanding of various disease states of the respiratory system, such as asthma, obstructive lung diseases, and infectious diseases, including the pathology, pathophysiology and pharmacological and interventional treatment of these diseases.</p>
1	Spring	VS 121	Visual Optics	Fullard	<p>Paraxial Optics: wave optics versus paraxial optics, optics of the eye and schematic eyes, emmetropia and ametropia, entoptic phenomena, direct ophthalmoscope (overview), cornea, keratometry and corneal topography, ametropia: demographics, development and measurement, astigmatism & astigmatic image formation, astigmatism and subjective refraction, retinoscopy (overview), the pupil and blurred imagery, crystalline lens and accommodation, intraocular lenses, retinal image height, anisometropia and aniseikonia, Purkinje images (overview). Wave Optics: depth of focus (overview), interference and diffraction, aberrations, polarization and scattering. Quantum Optics: principles of quantum optics, fluorescence and lasers.</p>
1	Spring	VS 122	Visual Psychophysics	Loop	<p>Introduction to psychophysical measurement, principles of psychophysical measurement, absolute threshold of vision, intensity discrimination, adaptation to light and dark, spatial acuity, spatial vision, temporal factors in vision, the aging visual system, postnatal human vision development, and visual illusions</p>
1	Summer	OBHS 131	Systems 4: Renal (4 weeks)	Smith	<p>Each student will demonstrate an understanding of the normal anatomical structures of the renal and urinary systems, their relationships to each other, and their function; demonstrate an understanding of the normal histologic organization and function of the kidney and its nephrons, the ureters, the urinary bladder, and the urethra; demonstrate an understanding of normal renal physiology and the ability to apply this knowledge of renal physiology to explain the underlying pathophysiology of disease states of the renal and urinary systems; demonstrate an understanding of the various disease states of the renal and urinary systems, such as nephrotic and nephritic syndromes, diabetic nephropathy, glomerulonephropathies, and cystic kidney diseases, including the pathology, pathophysiology, and pharmacological and interventional treatment of these diseases.</p>
1	Summer	OPT 131	Ophthalmic Materials	Gordon	<p>This course is a continuation of Geometric and Clinical Optics from the Fall semester, and builds upon some of the basic concepts from the earlier course. After reviewing some clinical concepts from the Geometric and Clinical Optics course, we will primarily cover progressive addition lenses, absorptive lenses, lens coatings, and new optical technology. The laboratory portion will emphasize clinical aspects of optical dispensing such as lensometry skills, frame selection, the PD, and fitting height measurements for bifocal, trifocal, and progressive addition lenses. We will also introduce frame alignment/adjustment skills and the computerized edging process. Several laboratory sessions will take place in Optical Services on the clinic floor</p>
1	Summer	VS 131	Neurobiology of the Visual System	Gawne	<p>The purpose of this course is to provide you with a solid basic knowledge of the neural parts of the visual system (by far the largest part of the visual system), which will create a foundation for clinical applications ("where's the tumor?"), as well as providing the ability to understand new developments in the field of optometry and to teach and do research at the highest levels. Because the eyeball is covered in so many other parts of the curriculum the emphasis is on more central parts of the visual system. The course starts with didactics and then moves more into clinical correlates and case studies</p>

Year	Semester	Course Number	Course Title	Instructor	Course Description
1	Summer	VS 132	Eye Movements & Principles of Binocular Vision	Busetтини	<p>The main goal of this course is to give a basic anatomical and physiological knowledge of eye movements and binocular vision to correctly interpret the most common clinical cases encountered in clinical practice. This knowledge will also be needed to follow the specialized clinical courses on pathologies of eye movements and of binocular vision that are part of the optometric curriculum. Although this is not a clinical course, several clinical examples will be analyzed to better illustrate the key elements of the oculomotor systems and of binocular vision. Dr. Liu starts first (8 clock hours), covering the main physiological and functional properties of normal binocular vision and the typical measures used to quantify it. Dr. Busetтини (28 clock hours) then shows how binocular vision translates in terms of eye movement organization. He will then describe the neural circuitry driving the extraocular muscles, a circuitry that is shared by all oculomotor systems (final common pathway). The anatomical, physiological, and functional properties of the various oculomotor systems will then follow. Critical part of the course are the laboratory sessions (4 contact hours for Dr. Liu on binocular vision and 4 contact hours for Dr. Busetтини on eye movements for each student). Starting in 2016 the new VOR Clinic will be used for the oculomotor demonstrations conducted by Dr. Busetтини.</p>

Year	Semester	Course Number	Course Title	Instructor	Course Description
2	Fall	OBHS 211	Systems 5 Gastrointestinal & Musculoskeletal/Skin (weeks 1-8)	Smith	<p>Gastrointestinal System: Each student will demonstrate an understanding of the normal anatomical structures of the gastrointestinal system, their relationships to each other, and their function; demonstrate an understanding of the normal histologic organization and function of the gastrointestinal tract, including the oral cavity and salivary glands, esophagus, stomach, small and large intestines, liver, and gallbladder; demonstrate an understanding of normal gastrointestinal physiology and the ability to apply this knowledge of gastrointestinal physiology to explain the underlying pathophysiology of disease states of the gastrointestinal system; demonstrate an understanding of various diseases states affecting the esophagus, stomach, intestinal tract, and liver, including the pathology, pathophysiology and pharmacological and interventional treatment of these diseases.</p> <p>Musculoskeletal System & Skin: Each student will demonstrate an understanding of the normal anatomical structures of the upper and lower limbs, their relationships to each other, and their function; demonstrate an understanding of the normal histologic organization and function of skin, bone, cartilage, skeletal muscle, and peripheral nerves; demonstrate an understanding of the structure and function of the neuromuscular junction and pharmacological interventions used to treat disease states affecting the neuromuscular junction; demonstrate an understanding of arthritis, osteoporosis, and myasthenia, as well as disease states of the skin.</p>
2	Fall	CLN 211	Primary Eye Care Rotation I	Simms, Suzanne	This course is a clinic rotation designed to gradually ease the incoming student clinician into the Primary Care clinic. Student clinicians will be exposed to patient care in the following manner: observation of a 4 th year clinician during supervised patient care, pre-testing patients for 4 th year clinicians, performing preliminary exam elements on a patient while supervised by a 4 th year clinician, observing the family practice resident or the contact lens resident. Student interns also rotate to optical services during 4 weeks of this course. Grades are assigned using a pass/ fail grading system outlined in the course syllabus.
2	Fall	OPT 211	CEVS I	Steele (Turner Lab)	The CEVS course sequence is the fundamental course in the School of Optometry. Our mission is to: Attain competency for each student for each of the individual skills used in a primary care eye examination; Confirm that these skills can be used in a sequence on a patient, and that the data is collected and interpreted appropriately; Initiate an orientation to normal and abnormal findings; Ensure that all students are able to: 1. Recognize a healthy, normally functioning visual system. 2. Use the procedures and instruments taught in this course to investigate the integrity of the visual system and associated structures to either confirm or rule-out the presence of ocular or systemic disease. 3. Comprehend those factors that lead to functional and refractive abnormalities producing visual problems. 4. Intelligently collect and analyze data from the patient by means of case history, external and internal eye examination, examination of the ocular adnexa and other associated structures and systems, and with functional and refractive testing. 5. Begin to make decisions on prescribing the necessary refractive correction and/or other therapeutic measures to correct visual problems. 6. Record data and utilize a problem-focused medical record system with SOAP format appropriately. The material taught in CEVS builds on what has been taught in other courses within the Program up to this point, therefore students are expected to know material taught in previous courses and are held responsible for this material. Since all other courses within the Optometry program from this point on build on the foundation laid in CEVS, it is crucial that each student demonstrate competency in each of the course objectives and satisfy each course requirement. Students successfully completing the CEVS course sequence demonstrate readiness for entry into supervised individual clinical patient care.
2	Fall	OPT 212	Ocular Pharmacology	Than	This course considers the classification and pharmacologic actions of currently employed ophthalmic drugs. Emphasis is placed on the clinical utilization of these drugs including indications, contraindications, dosages, and side effects for the diagnosis and management of ocular disorders. Special emphasis is placed on medications used routinely for the delivery of primary eye care.

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2	Fall	VS 211	Visual Perception	Loop	Physical considerations of the stimulus for color, Brightness, hue & saturation, Color specification, Necessary & sufficient conditions for color vision, Trichromatic & Opponent theories of color vision, The OTHER photopic spectral sensitivity function, Physiological bases of the appearance of light, Abnormal color vision in people, Animal color vision, Dichromacy has been cured(sort of) by gene therapy, for your information = They call it psychophysics
2	Fall	OBHS 212	Systems 6 Hematology & Endocrine (Weeks 9-14)	Smith	<p>Endocrine System: Each student will demonstrate an understanding of the normal histologic organization and function of the organs of the endocrine system, including the pituitary, hypothalamus, thyroid, pancreas, parathyroid, and adrenal glands; demonstrate an understanding of normal endocrine physiology and the ability to apply this knowledge of endocrine physiology to explain the underlying pathophysiology of disease states of the endocrine system; demonstrate an understanding of various diseases states affecting the endocrine system, including the pathology, pathophysiology and pharmacological and interventional treatment of these diseases</p> <p>Male and Female Reproductive Systems: Each student will demonstrate an understanding of the normal histologic organization and function of the male and female reproductive organs; demonstrate an understanding of normal male and female reproductive physiology and the ability to apply this knowledge of reproductive physiology to explain the underlying pathophysiology of disease states of the male and female reproductive systems; demonstrate an understanding of various diseases states affecting the male and female reproductive systems, including the pathology, pathophysiology and pharmacological and interventional treatment of these diseases.</p> <p>Hematology: Each student will demonstrate an understanding of the normal histologic organization and function of the spleen and thymus; demonstrate an understanding of the normal cellular organization and function of the blood and the ability to apply this knowledge to explain the pathophysiology of disease states of the blood; demonstrate an understanding of various diseases states affecting the blood, including the pathology, pathophysiology and pharmacological and interventional treatment of these diseases.</p>
2	Spring	CLN 221	Primary Eye Care Rotation II	Simms, Suzanne	This course is a clinic rotation course and is a continuation of CLN 211. It is designed to prepare the student clinician for entering direct patient care during the subsequent term. Interns will continue to have patient encounters as described for CLN 211 but will be expected to perform additional skills for preliminary testing, retinoscopy, refraction, slit lamp biomicroscopy, tonometry and dilated fundus evaluation as those skills are passed in CEVS. These skills will be supervised by a 4 th year intern or an attending clinician. Student interns will rotate to optical services for 4 weeks as part of this course. Students may also rotate with the Family Practice resident and to the University Optometric group. Grades are assigned using a pass/ fail grading system outlined in the course syllabus.
2	Spring	CLN 222	Community Eye Care I	Perry	Second year interns entering CEC and taking CEVS concurrently have been taught basic techniques including visual acuities, cover test, retinoscopy, and direct ophthalmoscopy. The schedule is designed purposely to include many pediatric and adult screenings. Performing a few tests for a large group improves accuracy and instills the confidence of the interns in the results. As the term progresses, the interns master more sophisticated examination techniques and are able to put them to use in certain special screenings as well as in Black Belt and similar clinics, The prerequisite for this course is successfully progressing through the CEVS curriculum.

Year	Semester	Course Number	Course Title	Instructor	Course Description
2	Spring	OPT 221	CEVS II	Pate (Turner Lab)	The CEVS course sequence is the fundamental course in the School of Optometry. Our mission is to: Attain competency for each student for each of the individual skills used in a primary care eye examination; Confirm that these skills can be used in a sequence on a patient, and that the data is collected and interpreted appropriately; Initiate an orientation to normal and abnormal findings; Ensure that all students are able to: 1. Recognize a healthy, normally functioning visual system. 2. Use the procedures and instruments taught in this course to investigate the integrity of the visual system and associated structures to either confirm or rule-out the presence of ocular or systemic disease. 3. Comprehend those factors that lead to functional and refractive abnormalities producing visual problems. 4. Intelligently collect and analyze data from the patient by means of case history, external and internal eye examination, examination of the ocular adnexa and other associated structures and systems, and with functional and refractive testing. 5. Begin to make decisions on prescribing the necessary refractive correction and/or other therapeutic measures to correct visual problems. 6. Record data and utilize a problem-focused medical record system with SOAP format appropriately. The material taught in CEVS builds on what has been taught in other courses within the Program up to this point, therefore students are expected to know material taught in previous courses and are held responsible for this material. Since all other courses within the Optometry program from this point on build on the foundation laid in CEVS, it is crucial that each student demonstrate competency in each of the course objectives and satisfy each course requirement. Students successfully completing the CEVS course sequence demonstrate readiness for entry into supervised individual clinical patient care.
2	Spring	OPT 222	Diseases of the Anterior Segment	Than	This course considers the classification and pharmacologic actions of currently employed ophthalmic drugs. Emphasis is placed on the clinical utilization of these drugs including indications, contraindications, dosages, and side effects for the diagnosis and management of ocular disorders. Special emphasis is placed on medications used routinely for the delivery of primary eye care.
2	Spring	OPT 223	Public Health Optometry	Gordon (to be moved to a different semester)	Optometry students will learn the major public health and environmental vision concepts that are essential for their successful practice of optometry, and future leadership and advocacy activities for enhancing eye health and vision for people in the community. This learning will use out-of-class resources, readiness assessment quizzes and in-class activities. The team-based course will use assigned readings that have been selected to provide key concepts and information needed for individual quizzes, team quizzes and successful completion of in-class activities. Class activities will emphasize the application of concepts and information from the assigned readings. Through completion of the course, students should have an excellent understanding of important public health and environmental vision concepts, how these are applied to patient care and how these are applied to the practice of optometry and leadership in the profession.
2	Spring	OPT 224	Anomalies of Binocular Vision I	Hopkins	Anomalies of BV I has the following course objectives: 1. Review key aspects of binocular vision, accommodation, and ocular motor testing with emphasis on correlation of data. Provide instruction in additional testing measures including fixation disparity analysis; 2. Provide context for using BV/accommodative testing data to make the appropriate diagnosis for non-strabismic BV and accommodative disorders; 3. Provide systematic approach to determining most appropriate treatment modality for non-strabismic binocular vision, accommodative, and ocularmotor dysfunctions (some limited discussion of intermittent strabismus will be introduced); 4. Provide instruction on the appropriate application and techniques for vision therapy in the treatment of BV, accommodative, and ocular motor anomalies; 5. Provide an overview of mild-TBI and it's implications in vision care; 6. Provide overview of practice management considerations in vision therapy.

Year	Semester	Course Number	Course Title	Instructor	Course Description
2	Spring	OPT 225	Diseases of the Posterior Segment	Swanson (2016-)	Think of this course as “putting the fun in fundus.” Description of any anatomic abnormality begins with a thorough understanding of normal anatomy. Appreciating normal anatomy and function is the keystone to identifying disease processes. Therefore, while successful completion of your ocular anatomy course is a prerequisite, continued facility with normal anatomical observations is essential to your success in posterior segment evaluation. Please review structure and function of the retina so that you are fluent with such terms as unbo, foveola, fovea, macula, perifovea, retinal pigment epithelium, Bruch membrane, retinal and choroidal vascular and the anatomic arrangement of the retina. You should know the dimensions of the eye including the diameter of an optic disc (from which you can calculate its area), width of a retinal vein where it crosses the optic disc margin, the number of disc diameters (DD) from the edge of the ONH to the macula in a normal individual, the angular subtense in degrees of the optic disc, etc. This course is NOT designed to make you a retinal specialist. You should, however, keep these relatively modest objectives in mind. You should...1. Be able to evaluate the ocular fundus differentiating normal from abnormal. That is to say, you should appreciate the retinal anatomy (clinically and at the cellular level). You should be able to apply contemporary diagnostic procedures (BIO, SI, SLB). In addition, you should understand the indications for and interpretation of results from auxiliary procedures such as fluorescein angiography, ultrasound, and digital imaging procedures, for example. 2. Be able to stage diabetic retinopathy and macular degeneration and make management decisions according to contemporary guidelines; 3. Be able to evaluate patients who have had vascular incidents and determine the appropriate care process including systemic evaluation as indicated; 4. Be able to evaluate and describe the optic nerve; 5. Be able to interpret findings in the current literature and apply them to patient care; 6. Have a clear understanding of retinal conditions that are amenable to medical management and know what management is appropriate including indicated pharmaceuticals, dosage, frequency, route of administration and potential adverse effects; 7. appreciate when referral to a retina specialist is appropriate/unnecessary and when to send for consultation to another health-care provider; 8. Provide patient care and behave in a manner consistent with the UAB Code of Conduct.
2	Spring	OPT 226	Clinicolegal Aspects of Optometry	Horton	This course addresses the legal responsibility that optometrists assume when providing clinical care. Emphasis is upon federal regulations, basic legal principles and theories of liability, and their application to those areas of practice in which optometrists are most likely to incur a legal claim.
2	Spring	OPT 227	Introduction to Clinic	Sims, Janene	This course will help to increase your understanding of professional communication, communication problems and their solutions, and to integrate all skills and information learned in CEVS, CEC, and Ocular Pharmacology in order to make basic clinical decisions for a patient. After completing this course, you will have an increased understanding of professional communication, communication problems and their solutions. You should be able to recognize what tests are relevant in specific situations and recognize what findings are pertinent given the history and/or examination. The course will also orient you with the UAB Eye Care in its organization and guidelines through the Clinic Manual, Primary Care, Community Eye Care, and Optical Orientations.
2	Spring	OPT 228	Ocular Microbiology	Pucker	This course reviews ocular defense immunology, with an emphasis on eye specific processes. Pathogens affecting the ocular tissues are reviewed. The laboratory reviews the techniques for ocular surface sample collection and culturing.
2	Summer	CLN 231	Primary Eye Care Clinic I (Summer 1 or 2, both sessions 6 wks)	Simms, Suzanne	This Primary Care clinic course consists of 6 weeks of entry level patient care that is supervised by a clinical attending. The student clinician will see adult patients needing comprehensive eye exams and will be expected to complete the following independently: history, preliminary testing, refractive testing, anterior segment health, posterior segment health, assessment and plan as well as document all findings correctly into EHR and bill all services and materials appropriately with guidance from faculty. The efficiency of the exam is expected to improve on a weekly basis as well as the clinical knowledge base. Interns receive feedback on each patient encounter and receive a final letter grade for the course.

Year	Semester	Course Number	Course Title	Instructor	Course Description
2	Summer	CLN 232	Clinical Rotation I: Optical Services/Vision Therapy (Smr 1 or 2)	Elder	The primary goal clinical rotations is to become more proficient in the management of patients in optical services and vision therapy. In the Optical Services Special Rotation, 2nd and 3rd year interns will be provided with a variety of optical fittings and experiences in customer service identified with the optical department; including: general observations and overall assessments, customer service, technical abilities, integrative and decision-making abilities. In the Vision Therapy Special Rotations, interns will focus on the examination, assessment, diagnosis, treatment, and management of patients with binocular vision and accommodative disorders. This will include performing the following tests: ocular alignment, accommodative status, vergence ability, ocular motor skills, and sensory fusion.
2	Summer	CLN 233	Community Eye Care II (Summer 1 or 2, 48 hr ABE, 72 hr CD**)	Perry	Second year interns return to CEC with the basic tools to perform adult eye examinations. During this course, they will have patient encounters at Health Department clinics, M-Power Ministries, The Foundry, community clinics locally and in the Black Belt region of Alabama and the United Cerebral Palsy of Birmingham LincPoint Campus. The objective is to teach them how to select tests based on patient symptoms and signs, rather than doing all the tests in their repertoire. They are also exposed to the financial side of practicing optometry and begin to understand the value of coding and billing properly. The prerequisite for this course is the successful completion of CEVS.

Year	Semester	Course Number	Course Title	Instructor	Course Description
3	Fall	CLN 311	Primary Eye Care Clinic II	Simms, Suzanne	This course is a continuation of CLN 231 and consists of supervised patient experiences to make the student intern proficient in the examination, diagnosis and management of adult primary care patients. Interns are expected to meet the expectations listed for CLN 231 with increased efficiency and knowledge base as they progress through the clinic course series and continue to demonstrate the ability to function more independently in delivering patient care. Interns receive feedback on each patient encounter and receive a final letter grade for the course.
3	Fall	CLN 312	Clinical Rotation II, w VT (64 or 88 clk hrs; balances Spring 3**)	Than	The primary goal clinical rotations is to become more proficient in the management of patients in optical services and vision therapy. In the Optical Services Special Rotation, 2nd and 3rd year interns will be provided with a variety of optical fittings and experiences in customer service identified with the optical department; including: general observations and overall assessments, customer service, technical abilities, integrative and decision-making abilities. In the Vision Therapy Special Rotations, interns will focus on the examination, assessment, diagnosis, treatment, and management of patients with binocular vision and accommodative disorders. This will include performing the following tests: ocular alignment, accommodative status, vergence ability, ocular motor skills, and sensory fusion.
3	Fall	CLN 313	Community Eye Care III	Perry	As the interns enter their 3rd year, our objective is to take the small amount of experience gained during the summer and expand on it during the fall term. By this time, the interns are ready to begin regular rotations through the health/eye clinics. We teach ways of dealing with patient diversity in a primary care eye clinic, where you never know what condition will be next in the chair. They also begin to put the puzzle together regarding assessment and plan. Making case presentation to their supervising faculty and to their patient strengthens their confidence in their ability to make good decisions. The prerequisite for this course is the successful completion of CLN 233.
3	Fall	OPT 311	Anomalies of Binocular Vision II	Hopkins (Ray Lab)	Anomalies of BV II has the following course objectives: 1. Students will be familiar with the etiology and mechanisms as well as the appropriate diagnostic procedures for the accurate diagnosis of amblyopia; 2. Students will be familiar with the consequences of untreated amblyopia and know how to apply evidence based treatment strategies in the management of amblyopia; 3. Students will understand how to classify and appropriately diagnose comitant and incomitant strabismus; 4. Students will be familiar with sensory adaptations and consequences of untreated strabismus; 5. Students will be familiar with treatment strategies in the management of comitant and incomitant strabismus; 6. Students will be familiar with the diagnosis and management of aniseikonia.
3	Fall	OPT 312	Contact Lenses	Clore	This course is a comprehensive course that gives the future eye care practitioner an extended scope and enhanced understanding of the contact lens field. Starting with an introduction to contact lenses as a vision correction option, the historical development, physical and optical properties, soft contact lens design, fitting philosophies, and application to the human eye with anatomic, physiologic and visual considerations are covered. The course continues with the fitting and prescription of soft and rigid gas-permeable (GP) contact lenses, and progresses from spherical soft and GP lenses to lenticular and aspheric GP designs, and then through the more complicated corrections of significant astigmatism with bitoric GP lenses and toric soft designs. The design, fitting, and application of GP scleral lenses is also covered. The handling, and verification of these GP and soft lenses will be covered. The course includes soft, hybrid and GP specialty lenses, in the
3	Fall	OPT 313	Geriatric Optometry	Swanson	Be familiar with the major theories of aging, Be familiar with the demographic changes occurring in the United States and their implications for health care delivery and national policy, Be familiar with the social demographics of aging, especially as they relate to stereotypes of older adults , You should be able to identify the expected changes that occur in most organ systems with the aging process., Understand Alzheimer's disease and it's vision effects, Understand depression and it's vision effects, Understand changes in cognitive function with aging, Understand the basic functional assessment tests used in evaluating older adults, You should have knowledge of how other disciplines evaluate and treat older patients, and the concept of interdisciplinary care., Understand the types of long term care in the United States and vision care in these facilities, You should understand the structure, varieties and importance of the Medicare system, You should be familiar with changes in psychophysical measurements of vision and their changes with aging in particular how these impact day to day vision function, You should know in detail the changes that occur with aging to the eye and visual system

Year	Semester	Course Number	Course Title	Instructor	Course Description
3	Fall	OPT 314	Low Vision	DeCarlo	This course is designed to teach the essential principles of vision rehabilitation as a treatment modality for the disability caused by visual acuity or visual field impairment. Special emphasis is placed on assessment of impaired vision as well as the use of magnification and training as a means to maximize visual function and quality of life. At the conclusion of this course, students should understand: The basic assessment of a patient with impaired vision, the 4 types of magnification, the concept of equivalent power, how to prescribe magnification, the resources available to people with impaired vision, and the importance of training as part of the treatment program.
3	Fall	OPT 315	Physical Diagnosis	Kleinstein	OPT 315-00 is a blended, skills-based course that utilizes a virtual (online) classroom, interactive classroom and lab instruction, and simulation training. This course builds on the Systems/Gross Anatomy courses taught in the first and second professional years. Anatomical review of organ systems and theory of multi-system physical assessment, with emphasis on relevance to optometric practice, are taught online and in class. Techniques and interpretation of physical assessment skills are taught in lab. Simulated clinical situations are presented in a medical simulation setting.
3	Fall	OPT 316	Glaucoma	Twa	In general the glaucoma that will be discussed is Primary Open Angle Glaucoma (POAG). We will review diagnostic procedures, especially evaluation of the optic nerve, and their clinical implication, risk evaluation and epidemiology as a basis for treatment decisions. Other topics that are listed in the lecture schedule will include pharmacology review, the secondary glaucomas, narrow-angle glaucoma etc. Because of your needs as relatively naive clinicians this course will be different from versions of the past. From my interpretation of your responses to the glaucoma familiarity survey (GFS), I have restructured the topic material. This has been done in consultation with representatives of classes who have gone ahead of you. There will be emphasis on literature review and discussion.
3	Spring	CLN 321	Primary Eye Care Clinic III	Simms, Suzanne	This course is a continuation of CLN 311 and consists of supervised patient experiences to make the student intern proficient in the examination, diagnosis and management of adult primary care patients. Interns are expected to meet the expectations listed for CLN 311 with increased efficiency and knowledge base as they progress through the clinic course series and continue to demonstrate the ability to function more independently in delivering patient care. Interns receive feedback on each patient encounter and receive a final letter grade for the course.
3	Spring	CLN 322	Clinical Rotation III, incl. Vision Therapy	Than	The primary goal clinical rotations is to become more proficient in the management of patients in optical services and vision therapy. In the Optical Services Special Rotation, 2nd and 3rd year interns will be provided with a variety of optical fittings and experiences in customer service identified with the optical department; including: general observations and overall assessments, customer service, technical abilities, integrative and decision-making abilities. In the Vision Therapy Special Rotations, interns will focus on the examination, assessment, diagnosis, treatment, and management of patients with binocular vision and accommodative disorders. This will include performing the following tests: ocular alignment, accommodative status, vergence ability, ocular motor skills, and sensory fusion.
3	Spring	CLN 323	Community Eye Care IV	Perry	This is a continuation of CLN 313 and requires the passage of that course to progress. At this level, the technical ability of the interns is vastly improved and they tend to press for more patient contact. Such clinic exposure provides an opportunity to refine the art of case presentation. Having also had a healthy dose of pharmacology, they are ready to make decisions about the proper agent to prescribe for what they think the patient has. As the term progresses, it is expected that exam proficiency will continue to increase and clinical presentation will become more polished. All of this should stand them in good stead as they prepare to leave for externships at the beginning of the next term.
3	Spring	OPT 321	Neuro-Optometry	Swanson	This course uses a case discussion format to cover major neurological disorders affecting the visual system. The emphasis in this course is the clinical thinking process that students will need as they transition to problem-based thinking.

Year	Semester	Course Number	Course Title	Instructor	Course Description
3	Spring	OPT 322	Pediatric Optometry	Weise	The clinical optometric examination of typically and atypically developing children is presented in this course, from greeting the patient to evidence-based assessment and management. Prenatal, infant and child development are reviewed as well as the development and management of pediatric refractive error, amblyopia, and binocular vision. Concepts in child abuse and pediatric pharmacological management are presented along with genetic, neurological, ocular, systemic, and congenital conditions that affect children. The course also introduces optometric management of learning-related vision disorders and standardized testing methods. Related practice management, ethics, communication, public health awareness, and literature review techniques permeate the course. The theory behind the techniques and treatment strategies is covered during class time. Lectures are supplemented with laboratory time that allows for hands-on, detailed experience with real infants and children. Techniques are video-recorded and are evaluated by both instructors and peers. The course is presented largely by the coursemaster and lab coursemaster with guest lecturers from the departments of optometry and ophthalmology to underscore the importance of collaborative care of the child.
3	Spring	OPT 323	Injections and Minor Surgical Procedures	Than	Instrumentation and skills necessary for injections and minor surgical procedures will be covered. Includes OSHA regulations pertaining to optometry practices, asepsis, injections, suturing, and minor surgical procedures. Lecture and hands-on participation.
3	Spring	OPT 324	Business Aspects of Optometry	Laurent	This course introduces students to basic principles of business administration that are essential for the practice of optometry and assists students in developing a practice plan for their entry into the profession.
3	Spring	OPT 325	Clinical Management of Vision Problems	Turner	This course utilizes a lecture-based classroom approach augmented by a case-based, problem oriented laboratory learning approach to managing clinical conditions. Clinical conditions that will be encountered in optometric practice are examined with an emphasis on patient management. The laboratory sessions utilize an interactive format facilitated by faculty and is designed to develop independent, self-directed learning and clinical decision making skills. In the laboratory learning environment, clinical case presentations provided by course faculty and those derived from the participants' clinical experiences will provide a basis for integration and critical analysis. Well-structured clinical cases are used to help bridge the gap between classroom learning and expectations of clinical performance. The purpose of this design is to promote independent, critical thinking. Clinical reasoning is developed by students applying knowledge from their didactic coursework and linking it with their clinical decision-making skills.
3	Fall	OPT 327	Ophthalmic Lasers	Than	This course will provide instruction on the fundamentals of ophthalmic lasers including Nd:YAG, Argon, CO2, Diode, and Excimer. The lectures and hands-on laboratories will teach the technical skills required to perform lasers procedures including posterior capsulotomy, peripheral iridotomy and laser trabeculoplasty.
3	Spring	OPT 511	Advanced Dry Eye Elective	Nichols, K	The student will gain an understanding of the patient populations affected with dry eye; have a fundamental background knowledge in the history of dry eye, the relevant epidemiological trends in dry eye diagnosis and management, clinical trials design, and the basic anatomical/physiological component aspects of the ocular surface. They will also demonstrate the ability to effectively diagnose and manage dry eye through didactic and hands-on experience, and effectively discuss a "dry eye practice" model with a potential employer.
3	Spring	OPT 512	Advanced Contact Lenses Elective	Gordon	This course is an elective for 3rd year optometry students wishing to improve their knowledge and clinical skills in the contact lens management of patients with advanced or complex conditions. This course is not a traditional lecture/lab class. The instructors believe that the best way to learn patient care is to actively care for patients under the guidance and mentorship of expert clinicians. Our main goal is to provide direct, hands-on experience examining, fitting, evaluating, and managing patients with advanced contact lens designs. The instructors will strive to provide a number of interesting patients each week for direct care and follow up. The primary focus will be the utilization of various gas-permeable (GP) and other contemporary lens designs for conditions such as corneal ectasia (keratoconus, post-surgical, or trauma-induced), high or complex refractive conditions, presbyopia, and ocular surface disease. Students will also learn by applying, evaluating, and removing various lens designs on each other and on themselves. Representatives and consultants from various contact lens manufacturers may be invited to make presentations on their products and assist in the clinical care of patients.

Year	Semester	Course Number	Course Title	Instructor	Course Description
3	Spring	OPT 513	Ophthalmic Imaging	Steele	This blended course will utilize both in-person lecture and hands-on as well as online instruction and assignments in order maximize student exposure to technology in ophthalmic imaging and specialty testing. Imaging devices covered would include anterior and posterior segment photography, optical coherence tomography, and ultrasonography. This course is intended to be an elective course for 3rd year students.
3	Summer	CLN 331	Primary Eye Care Clinic IV	Simms, Suzanne	This course is a continuation of CLN 321 and consists of supervised patient experiences to make the student intern proficient in the examination, diagnosis and management of adult primary care patients. Interns are expected to meet the expectations listed for CLN 321 with increased efficiency and knowledge base as they progress through the clinic course series and continue to demonstrate the ability to function more independently in delivering patient care. Interns begin to see an increased number of patients per day as well as more diverse and complex conditions. Interns receive feedback on performance and receive a final letter grade for the course.
3	Summer	CLN 332	Pediatric Optometry Clinic I	Weise	Through direct patient care, guided education, and independent study in an academic clinical setting, the student will learn skills that help promote and protect the eye and visual health of children, as well as adults with binocular vision anomalies, and individuals with special needs or mild traumatic brain injury.
3	Summer	CLN 333	Cornea & Contact Lens Clinic I	Gordon	The primary objective of clinical courses within this service is for the intern to achieve entry-level competence managing patients using all available contact lens technology. Faculty will provide assistance, guidance, and supervision to enable the intern to develop satisfactory performance in the following areas: Performing examinations efficiently and independently, with appropriate documentation in the medical record and coding/billing for each visit;; Examining patients using proper procedures, techniques, and instrumentation; Fitting, evaluating, prescribing, and managing patients using all types of contact lens designs and materials; Verifying, handling, dispensing, and identification of all types of contact lenses; Recommending appropriate lens wearing modalities; Recommending appropriate contact lens care systems and instructing patients in their proper use; Diagnosing and treating complications of contact lens wear; Diagnosing and treating external and anterior segment ocular diseases; Evaluating patients interested in refractive surgery and providing appropriate pre- and postoperative care; Understanding the role and value of contact lens patients in the overall context of a successful optometric practice.
3	Summer	CLN 335	Special Clinical Rotation I	Than	The primary goal clinical rotations is to become more proficient in the management of patients in optical services and vision therapy. In the Optical Services Special Rotation, 2nd and 3rd year interns will be provided with a variety of optical fittings and experiences in customer service identified with the optical department; including: general observations and overall assessments, customer service, technical abilities, integrative and decision-making abilities. In the Vision Therapy Special Rotations, interns will focus on the examination, assessment, diagnosis, treatment, and management of patients with binocular vision and accommodative disorders. This will include performing the following tests: ocular alignment, accommodative status, vergence ability, ocular motor skills, and sensory fusion.
3	Summer	CLN 336	Externship I	Elder	Students will learn to develop a high level of competence in the use of optometric techniques, instruments and problem solving roles, to engender high standards of professional competence and responsibility, to develop the ability to work and communicate effectively with other health professionals and ancillary personnel for the sensitive and responsive delivery of eye care, and will prepare students for lifelong career satisfaction. Students will demonstrate to the art of the practice of optometry as evidenced by the attending doctor/practitioner. The externship will widen the student's understanding of the broad spectrum of optometry practice by showing the student the clinical conditions and their interaction with each other that make up the wide variety of health conditions in the community. The student will demonstrate the use of common diagnostic and therapeutic procedures involved in the problem solving stages of the delivery of eye care. The student will demonstrate the role of the optometrist in patient education and the conscious and purposeful use and development of the doctor-patient relationship. Finally the externship will provide practical experience in the office management and business aspects of optometric practice.

Year	Semester	Course Number	Course Title	Instructor	Course Description
3	Summer	CLN 343	Ocular Disease & Low Vision Clinic I	Swanson	In these courses you will gain experience and expertise in the evaluation and management of a wide variety of patients with ocular disease and visual impairment. Specific skills to be learned will include adequate history for ocular disease management, use and interpretation of advanced imaging procedures, use and interpretation of visual fields, pre-operative and post-operative evaluation and management, medication management and co-management of ocular disease. Low vision skills to be learned will include low vision history taking, general low vision examination procedures, and prescribing of appropriate low vision devices and services. General understanding of coding and billing for ocular disease and low vision services will be learned.
4	Fall	CLN 410	Primary Eye Care Clinic V	Simms, Suzanne	This clinic course is a continuation of CLN 331. Interns at this level primarily see adult patients in the primary care clinic at a more advanced level. Efficiency must be at a level sufficient to see an increased number of patients compared to the previous years. In addition to comprehensive annual exams, interns are exposed to a variety of conditions by seeing walk-ins, emergency patients, concussion patients, severely handicapped patients, and contact lens fits. Interns receive feedback on performance and receive a final letter grade for the course. The examinations at this level are more numerous, more complex and more diverse to prepare the intern for entry level optometry practice following graduation.
4	Fall	CLN 411	Pediatric Optometry Clinic II	Weise	Through direct patient care, guided education, and independent study in an academic clinical setting, the student will learn skills that help promote and protect the eye and visual health of children, as well as adults with binocular vision anomalies, and individuals with special needs or mild traumatic brain injury.
4	Fall	CLN 412	Cornea & Contact Lens Clinic II	Gordon	The primary objective of clinical courses within this service is for the intern to achieve entry-level competence managing patients using all available contact lens technology. Faculty will provide assistance, guidance, and supervision to enable the intern to develop satisfactory performance in the following areas: Performing examinations efficiently and independently, with appropriate documentation in the medical record and coding/billing for each visit;; Examining patients using proper procedures, techniques, and instrumentation; Fitting, evaluating, prescribing, and managing patients using all types of contact lens designs and materials; Verifying, handling, dispensing, and identification of all types of contact lenses; Recommending appropriate lens wearing modalities; Recommending appropriate contact lens care systems and instructing patients in their proper use; Diagnosing and treating complications of contact lens wear; Diagnosing and treating external and anterior segment ocular diseases; Evaluating patients interested in refractive surgery and providing appropriate pre- and postoperative care; Understanding the role and value of contact lens patients in the overall context of a successful optometric practice.
4	Fall	CLN 413	Ocular Disease & Low Vision Clinic II	Swanson	In these courses you will gain experience and expertise in the evaluation and management of a wide variety of patients with ocular disease and visual impairment. Specific skills to be learned will include adequate history for ocular disease management, use and interpretation of advanced imaging procedures, use and interpretation of visual fields, pre-operative and post-operative evaluation and management, medication management and co-management of ocular disease. Low vision skills to be learned will include low vision history taking, general low vision examination procedures, and prescribing of appropriate low vision devices and services. General understanding of coding and billing for ocular disease and low vision services will be learned.
4	Fall	CLN 414	Special Clinical Rotation II	Than	The special clinical rotation for fourth year students allows them to become proficient in the examination, diagnosis, and clinical management of patients in special populations and to be able to function independently in that same capacity. To accomplish this, students will work with Advanced Optical, Alabama Institute for the Deaf and Blind, Developmental Vision, External rotations, Mild Traumatic Brain Injury and the Eye Clinic (mTBEye), Nursing Homes, and Optical Services.

Year	Semester	Course Number	Course Title	Instructor	Course Description
4	Fall	CLN 415	Externship II	Elder	Students will learn to develop a high level of competence in the use of optometric techniques, instruments and problem solving roles, to engender high standards of professional competence and responsibility, to develop the ability to work and communicate effectively with other health professionals and ancillary personnel for the sensitive and responsive delivery of eye care, and will prepare students for lifelong career satisfaction. Students will demonstrate to the art of the practice of optometry as evidenced by the attending doctor/practitioner. The externship will widen the student's understanding of the broad spectrum of optometry practice by showing the student the clinical conditions and their interaction with each other that make up the wide variety of health conditions in the community. The student will demonstrate the use of common diagnostic and therapeutic procedures involved in the problem solving stages of the delivery of eye care. The student will demonstrate the role of the optometrist in patient education and the conscious and purposeful use and development of the doctor-patient relationship. Finally the externship will provide practical experience in the office management and business aspects of optometric practice.
4	Spring	CLN 420	Primary Eye Care Clinic VI	Simms, Suzanne	This clinic course is a continuation of CLN 410. Interns at this level primarily see adult patients in the primary care clinic at a more advanced level. Efficiency must be at a level sufficient to see an increased number of patients compared to the previous years. In addition to comprehensive annual exams, interns are exposed to a variety of conditions by seeing walk-ins, emergency patients, concussion patients, severely handicapped patients, and contact lens fits. Interns receive feedback on performance and receive a final letter grade for the course. The examinations at this level are more numerous, more complex and more diverse to prepare the intern for entry level optometry practice following graduation.
4	Spring	CLN 421	Pediatric Optometry Clinic III	Weise	Through direct patient care, guided education, and independent study in an academic clinical setting, the student will learn skills that help promote and protect the eye and visual health of children, as well as adults with binocular vision anomalies, and individuals with special needs or mild traumatic brain injury.
4	Spring	CLN 422	Cornea & Contact Lens Clinic III	Gordon	The primary objective of clinical courses within this service is for the intern to achieve entry-level competence managing patients using all available contact lens technology. Faculty will provide assistance, guidance, and supervision to enable the intern to develop satisfactory performance in the following areas: Performing examinations efficiently and independently, with appropriate documentation in the medical record and coding/billing for each visit;; Examining patients using proper procedures, techniques, and instrumentation; Fitting, evaluating, prescribing, and managing patients using all types of contact lens designs and materials; Verifying, handling, dispensing, and identification of all types of contact lenses; Recommending appropriate lens wearing modalities; Recommending appropriate contact lens care systems and instructing patients in their proper use; Diagnosing and treating complications of contact lens wear; Diagnosing and treating external and anterior segment ocular diseases; Evaluating patients interested in refractive surgery and providing appropriate pre- and postoperative care; Understanding the role and value of contact lens patients in the overall context of a successful optometric practice.
4	Spring	CLN 423	Ocular Disease & Low Vision Clinic III	Swanson	In these courses you will gain experience and expertise in the evaluation and management of a wide variety of patients with ocular disease and visual impairment. Specific skills to be learned will include adequate history for ocular disease management, use and interpretation of advanced imaging procedures, use and interpretation of visual fields, pre-operative and post-operative evaluation and management, medication management and co-management of ocular disease. Low vision skills to be learned will include low vision history taking, general low vision examination procedures, and prescribing of appropriate low vision devices and services. General understanding of coding and billing for ocular disease and low vision services will be learned.
4	Spring	CLN 424	Special Clinical Rotation III	Than	The special clinical rotation for fourth year students allows them to become proficient in the examination, diagnosis, and clinical management of patients in special populations and to be able to function independently in that same capacity. To accomplish this, students will work with Advanced Optical, Alabama Institute for the Deaf and Blind, Developmental Vision, External rotations, Mild Traumatic Brain Injury and the Eye Clinic (mTBEye), Nursing Homes, and Optical Services.

Year	Semester	Course Number	Course Title	Instructor	Course Description
4	Spring	CLN 425	Externship II	Elder	Students will learn to develop a high level of competence in the use of optometric techniques, instruments and problem solving roles, to engender high standards of professional competence and responsibility, to develop the ability to work and communicate effectively with other health professionals and ancillary personnel for the sensitive and responsive delivery of eye care, and will prepare students for lifelong career satisfaction. Students will demonstrate to the art of the practice of optometry as evidenced by the attending doctor/practitioner. The externship will widen the student's understanding of the broad spectrum of optometry practice by showing the student the clinical conditions and their interaction with each other that make up the wide variety of health conditions in the community. The student will demonstrate the use of common diagnostic and therapeutic procedures involved in the problem solving stages of the delivery of eye care. The student will demonstrate the role of the optometrist in patient education and the conscious and purposeful use and development of the doctor-patient relationship. Finally the externship will provide practical experience in the office management and business aspects of optometric practice.
		*Elective			