Optometry

Optometrists provide primary vision care, including comprehensive eye examinations and the diagnosis, treatment, and management of most eye conditions and diseases. To prepare you as a professional capable of meeting this broad scope of responsibilities, the curriculum at Berkeley Optometry is designed to provide first-rate clinical training as well as instruction in the science of vision.

Our world-class faculty (http://optometry.berkeley.edu/faculty/introduction/) offer comprehensive clinical training enhanced by cutting-edge education in vision science. They will prepare you to meet the challenges of expanding primary eye care. You will acquire knowledge of cell and molecular biology, pharmacology, genetics, epidemiology of eye disorders, and state-of-the-art clinical technology. You will also have training in all clinical areas, including primary care and specialties such as binocular disorders, contact lenses, low vision, ocular disease, geriatrics, pediatrics, and refractive surgery.

The Clinics

Berkeley Optometry operates its teaching clinics on a twelve-month basis. Our students have progressively more clinical training and responsibility as they advance through the four-year program. Third-year students spend about half their time in clinic, while fourth-year students spend virtually all their time in clinic.

One key element in the Berkeley Optometry program is the provision of in-depth clinical experience in a variety of settings. Our intensive-training clinics (https://optometry.berkeley.edu/academics/clinical-training/) (On-Campus Clinics, Off-CampusExternshipClinics, and CommunityOutreachClinics) offer services to populations associated with our Berkeley Optometry clinics or affiliated clinics around the country and the world.

The Meredith Morgan Eye Center provides comprehensive eye care to members of the Berkeley campus and the local community. There are more than 80,000 patient visits each year for which our faculty and students provide a full range of services from primary eye care to the diagnosis and management of vision problems caused by diseases such as glaucoma, cataracts, and diabetes. All students also participate in external clinical rotations. At the end of the four-year OD Program, each student will have, on average, examined 2,500 patients.

The Curriculum

Berkeley Optometry makes a major contribution to the field of health care by training skilled practitioners through a curriculum that is continuously updated to reflect the latest in research and clinical training. We are dedicated to keeping pace with the expanding field of optometry and the profession's move toward a more extensive health science model of primary care.

As you look through the course descriptions in our curriculum (https://optometry.berkeley.edu/academics/curriculum/), you will see the depth and range of study and training offered by our optometry program. One exciting and effective approach is introducing our students to clinical education from the first day.

For example, OPTOM 200A (Clinical Examination of the Visual System; fall semester) is taught in the first semester of the program, when you will learn how to take case histories, perform preliminary examinations of the eye, and measure refractive error. By the spring of your first year, OPTOM 200B (Clinical Examination of the Visual System; spring semester) will introduce you to advanced examination techniques. These clinical procedures will be complemented by course work in biology, optics, and pharmacology. We have found that this early introduction to the clinical examination, combined with basic science courses, makes the learning of optometry interesting and relevant. Please look at our curriculum and see for yourself how we integrate clinical and basic science from the beginning.

Admission to the Doctor of Optometry (OD) Program

Note: Applicants for optometric study in the United States and Puerto Rico use a common application service, OptomCAS. By utilizing a common application service, prospective students file one application that can be sent to multiple schools and colleges of optometry. The Admissions and Student Affairs Office is thrilled to be a participant in OptomCAS school as we strive to make the application process more efficient and convenient for you.

More information can be found here: www.optomcas.org (http://www.optomcas.org/)

To be considered for admission to the School of Optometry in full-time regular status, you must meet the Application Requirements. More detailed information can be found on our website (https://optometry.berkeley.edu/admissions/).

Curriculum by Year (OD Program)

First-Year Curriculum (39.5 units)

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<tr>
<td>OPTOM 200A</td>
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<td>OPTOM 200AL</td>
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<tr>
<td>VIS SCI 203A</td>
<td>Geometric Optics [4]</td>
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<td>VIS SCI 205</td>
<td>Visual Perception Sensitivity [4.5]</td>
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<tr>
<td>VIS SCI 206A</td>
<td>Anatomy and Physiology of the Eye [2]</td>
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<td>VIS SCI 206D</td>
<td>Neuroanatomy and Neurophysiology of the Eye and Visual System [2]</td>
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<tr>
<th>Spring</th>
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<tbody>
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<td>OPTOM 200B</td>
<td>Clinical Examination of the Visual System [2]</td>
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<tr>
<td>OPTOM 200BL</td>
<td>Clinical Examination of the Visual System [3]</td>
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<tr>
<td>OPTOM 222A</td>
<td>Optics of Ophthalmic Lenses [4]</td>
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<tr>
<td>VIS SCI 203B</td>
<td>Optical System and Physical Optics [4]</td>
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<tr>
<td>VIS SCI 206B</td>
<td>Anatomy and Physiology of the Eye and Visual System [3]</td>
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<tr>
<td>VIS SCI 217</td>
<td>Oculomotor Functions and Neurology [2]</td>
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<tr>
<td>VIS SCI 219</td>
<td>Binocular Vision and Space Perception [2]</td>
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Second-Year Curriculum (34 units)

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<th>Fall</th>
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<tbody>
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<td>Clinical Examination of the Visual System [2]</td>
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<tr>
<td>OPTOM 200CL</td>
<td>Clinical Examination of the Visual System [2]</td>
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<tr>
<td>OPTOM 213</td>
<td>Evidence Based Optometry [1]</td>
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<tr>
<td>OPTOM 222B</td>
<td>Advanced Clinical Optics [2]</td>
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<tr>
<td>OPTOM 226A</td>
<td>Systemic Pharmacology [2.5]</td>
</tr>
<tr>
<td>OPTOM 236A</td>
<td>Systemic Disease and its Ocular Manifestations [3]</td>
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</table>
OPTOM 270B Eyecare Business and Professional Management I [2]

Spring
OPTOM 200D Clinical Examination of the Visual System [2]
OPTOM 200DL Clinical Examination of the Visual System [2]
OPTOM 226B Ocular Pharmacology [2.5]
OPTOM 236B Systemic Disease and its Ocular Manifestations [3]
OPTOM 240 Diagnosis and Treatment of Sensory/Motor Anomalies [3]
OPTOM 260A Contact Lenses: Examination Principles and Practice [3]
VIS SCI 206C Anatomy and Physiology of the Eye and Visual System [2]

Third-Year Curriculum (45.5 units)

Summer
OPTOM 430A Optometry Clinics [8]
OPTOM 432 Introduction to Clinical Topics for the New Clinician [2]

Fall
OPTOM 241 Advanced Management and Rehabilitation of Sensory/Motor Anomalies [3]
OPTOM 246 Diagnosis and Treatment of Anterior Segment Ocular Disease [4]
OPTOM 251 Low Vision [2.5]
OPTOM 430B Optometry Clinics [9]
OPTOM 435 Advanced Procedures in Ocular Disease Diagnosis [2]

Spring
OPTOM 256 Diagnosis and Treatment of Posterior Segment Ocular Disease [4]
OPTOM 270C Eyecare Business and Professional Management II [2]
OPTOM 430C Optometry Clinics [9]

Fourth-Year Curriculum (46 units)

Summer
OPTOM 440A Advanced Optometry Clinic [2.5]
OPTOM 441A Specialty Clinics [2.5]

Fall
OPTOM 440B Advanced Optometry Clinic [9]
OPTOM 441B Specialty Clinics [7]
OPTOM 450A Grand Rounds and Seminar [2]

Spring
OPTOM 440C Advanced Optometry Clinic [9]
OPTOM 441C Specialty Clinics [7]
OPTOM 450B Grand Rounds and Seminar [2]

Optometry

OPTOM 200A Clinical Examination of the Visual System 2 Units
Terms offered: Fall 2015, Fall 2014, Fall 2013
Fundamentals of the optometric examination. Case history, visual acuities, objective and subjective methods of determining refractive status. Basic examination of anterior ocular structures and the ocular fundus; perimetry.
Clinical Examination of the Visual System: Read More [+]

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Formerly known as: 100A

Clinical Examination of the Visual System: Read Less [-]

OPTOM 200AL Clinical Examination of the Visual System 3 Units
Terms offered: Fall 2019, Fall 2018, Fall 2017
Fundamentals of the optometric examination. Case history, visual acuities, objective and subjective methods of determining refractive status. Basic examination of anterior ocular structures and the ocular fundus; perimetry.
Clinical Examination of the Visual System: Read More [+]

Rules & Requirements
Repeat rules: Course may be repeated for credit with advisor consent.

Hours & Format
Fall and/or spring: 15 weeks - 6 hours of laboratory per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.

Clinical Examination of the Visual System: Read Less [-]
OPTOM 200B Clinical Examination of the Visual System 2 Units
Terms offered: Spring 2016, Spring 2015, Spring 2014
Classification and epidemiology of refractive errors, evaluation of accommodative and binocular status. Tonometry, advanced techniques of examining the posterior pole, evaluation of visual pathway function.
Clinical Examination of the Visual System: Read More [+]

Rules & Requirements
Prerequisites: 200A
Repeat rules: Course may be repeated for credit with advisor consent.

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Formerly known as: 100B
Clinical Examination of the Visual System: Read Less [-]

OPTOM 200BL Clinical Examination of the Visual System 3 Units
Terms offered: Spring 2020, Spring 2017, Spring 2016
Classification and epidemiology of refractive errors, evaluation of accommodative and binocular status. Tonometry, advanced techniques of examining the posterior pole, evaluation of visual pathway function.
Clinical Examination of the Visual System: Read More [+]

Rules & Requirements
Prerequisites: Opt 200A, Opt 200AL
Repeat rules: Course may be repeated for credit with advisor consent.

Hours & Format
Fall and/or spring: 15 weeks - 6 hours of laboratory per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Clinical Examination of the Visual System: Read Less [-]

OPTOM 200C Clinical Examination of the Visual System 2 Units
Terms offered: Fall 2015, Fall 2014, Fall 2013
Case analysis of refractive, accommodative, and binocular anomalies. Pediatric examination techniques. Advanced methods of examining the peripheral ocular fundus; anterior chamber angle evaluation.
Clinical Examination of the Visual System: Read More [+]

Rules & Requirements
Prerequisites: 200B
Repeat rules: Course may be repeated for credit with advisor consent.

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Formerly known as: 100C
Clinical Examination of the Visual System: Read Less [-]

OPTOM 200CL Clinical Examination of the Visual System 2 Units
Terms offered: Fall 2019, Fall 2018, Fall 2017
Case analysis of refractive, accommodative, and binocular anomalies. Pediatric examination techniques. Advanced methods of examining the peripheral ocular fundus; anterior chamber angle evaluation.
Clinical Examination of the Visual System: Read More [+]

Rules & Requirements
Prerequisites: Optom 200B
Repeat rules: Course may be repeated for credit with advisor consent.

Hours & Format
Fall and/or spring: 15 weeks - 4 hours of laboratory per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Clinical Examination of the Visual System: Read Less [-]
OPTOM 200D Clinical Examination of the Visual System 2 Units
Terms offered: Spring 2017, Spring 2016, Spring 2015
Modification of the exam sequence for specific patient needs. Evaluation and management of tear film disorders; analysis of vision with cataract. Patient management and professional communications; legal and ethical issues; managed care and optometry.
Clinical Examination of the Visual System: Read More [+]
Rules & Requirements
Prerequisites: 200C, 200CL
Repeat rules: Course may be repeated for credit with advisor consent.
Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture per week
Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Clinical Examination of the Visual System: Read Less [-]

OPTOM 200DL Clinical Examination of the Visual System 2 Units
Terms offered: Spring 2020, Spring 2017, Spring 2016
Modification of the exam sequence for specific patient needs. Evaluation and management of tear film disorders; analysis of vision with cataract. Patient management and professional communications; legal and ethical issues; managed care and optometry.
Clinical Examination of the Visual System: Read More [+]
Rules & Requirements
Prerequisites: Optom 200C, Optom 200CL
Repeat rules: Course may be repeated for credit with advisor consent.
Hours & Format
Fall and/or spring: 15 weeks - 4 hours of laboratory per week
Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Clinical Examination of the Visual System: Read Less [-]

OPTOM 213 Evidence Based Optometry 1 Unit
Terms offered: Fall 2015, Fall 2014, Spring 2014
Basic concepts in evidence based optometry including various clinical study designs, potential sources of bias in each design as well as development of a systematic approach to evaluate strength of evidence from published studies, to identify potential limitations and develop appreciation for the importance of evidence based practice as a practice philosophy.
Evidence Based Optometry: Read More [+]
Rules & Requirements
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 1 hour of lecture per week
Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Instructor: Liu
Evidence Based Optometry: Read Less [-]

OPTOM 222A Optics of Ophthalmic Lenses 4 Units
Terms offered: Spring 2020, Spring 2016, Spring 2015
Optical and physical characteristics of ophthalmic lenses, to include spheric and aspherical surface of single and multifocal lens designs, and ophthalmic prisms. Lens power measurement methods, lens thickness power relationships and considerations in designing prescription eyewear. Characteristics of absorptive lenses, ophthalmic coatings, lens materials, and their role in ocular protection.
Optics of Ophthalmic Lenses: Read More [+]
Rules & Requirements
Prerequisites: Vision Science 203A
Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week
Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Optics of Ophthalmic Lenses: Read Less [-]
**OPTOM 222B Advanced Clinical Optics 2**

Units
Terms offered: Fall 2015, Spring 2015, Fall 2014
Ophthalmic lens aberrations and minimization. Ophthalmic lens designs relating to anisometropia, aniseikonia, and high refractive errors. Optics of the eye, contact lens optics, and optical principles of low vision aids. Environmental vision and related ophthalmic standards.

Advanced Clinical Optics: Read More [+]

Rules & Requirements

Prerequisites: 222A

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details

Subject/Course Level: Optometry/Graduate
Grading: Letter grade.

Formerly known as: 122B

Advanced Clinical Optics: Read Less [-]

**OPTOM 226A Systemic Pharmacology 2.5**

Units
Terms offered: Fall 2019, Fall 2018, Fall 2017
Basic pharmacology, terminology, and concepts (both pharmacodynamic and pharmacokinetic) and pharmacotherapy of medical conditions commonly encountered in clinical optometric practice (including cardiovascular disease, respiratory disease, diabetes, infection and inflammatory conditions, as well as central nervous system disorders).

Systemic Pharmacology: Read More [+]

Rules & Requirements

Prerequisites: Vision Science 206D

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Instructor: Wildsoet

Systemic Pharmacology: Read Less [-]

**OPTOM 226B Ocular Pharmacology 2.5**

Units
Terms offered: Spring 2017, Spring 2016, Spring 2015
Basic pharmacology, terminology, and concepts (both pharmacodynamic and pharmacokinetic) as applied to the eye and ophthalmic drugs, clinical prescribing issues including formulation, dosing and prescribing, and pharmacotherapy of anti-inflammatory, centrally acting, hormonal and other 'specialist' systemic drugs.

Ocular Pharmacology: Read More [+]

Rules & Requirements

Prerequisites: 226A

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Instructor: Wildsoet

Ocular Pharmacology: Read Less [-]

**OPTOM 230A Graduate General Clinical Practice 2 - 6**

Units
Terms offered: Fall 2015, Fall 2014, Fall 2013
General optometric practice for four hours per week per credit hour, including optometric examination, dispensing, consultation, and subsequent vision care of patients, performed independently by graduate student clinicians.

Graduate General Clinical Practice: Read More [+]

Rules & Requirements

Prerequisites: O.D. degree

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of clinic per week

Additional Details

Subject/Course Level: Optometry/Graduate
Grading: Letter grade.

Graduate General Clinical Practice: Read Less [-]
OPTOM 230B Graduate General Clinical Practice 2 - 6 Units
Terms offered: Spring 2017, Spring 2016, Spring 2015
General optometric practice for four hours per week per credit hour, including optometric examination, dispensing, consultation, and subsequent vision care of patients, performed independently by graduate student clinicians.

Rules & Requirements
Prerequisites: O.D. degree
Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 0 hours of clinic per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.

Graduate General Clinical Practice: Read Less [-]

OPTOM 231B Graduate Specialty Clinics 2 - 8 Units
Terms offered: Spring 2017, Spring 2016, Spring 2015
Clinical examination of patients in designated specialty clinics. More than one clinical specialty may be taken simultaneously.

Graduate Specialty Clinics: Read More [+]

Rules & Requirements
Prerequisites: O.D. degree
Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 0 hours of clinic per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.

Instructor: Orel-Bixler

Graduate Specialty Clinics: Read Less [-]

OPTOM 231A Graduate Specialty Clinics 2 - 8 Units
Terms offered: Fall 2015, Fall 2014, Fall 2013
Clinical examination of patients in designated specialty clinics. More than one clinical specialty may be taken simultaneously.

Graduate Specialty Clinics: Read More [+]

Rules & Requirements
Prerequisites: O.D. degree
Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 0 hours of clinic per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.

Graduate Specialty Clinics: Read Less [-]

OPTOM 236A Systemic Disease and its Ocular Manifestations 3 Units
Terms offered: Fall 2019, Fall 2018, Fall 2017
The pathophysiology, pharmacotherapy, and clinical management of systemic and ocular diseases will be discussed through a combination of lecture and problem-based learning approaches. Disease processes will be emphasized and include cellular injury and repair, inflammation, infection, degeneration, and neoplasia. Neurologic, cardiovascular, endocrine, pulmonary, and congenital disease and their relative ocular manifestations will be presented.

Systemic Disease and its Ocular Manifestations: Read More [+]

Rules & Requirements
Prerequisites: 200D. 236A is a prerequisite for 236B

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 2 hours of discussion per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.

Instructor: Harvey

Systemic Disease and its Ocular Manifestations: Read Less [-]
**OPTOM 236B Systemic Disease and its Ocular Manifestations 3 Units**
Terms offered: Spring 2017, Spring 2016, Spring 2015
The pathophysiology, pharmacotherapy, and clinical management of systemic and ocular diseases will be discussed through a combination of lecture and problem-based learning approaches. Disease processes will be emphasized and include cellular injury and repair, inflammation, infection, degeneration, and neoplasia. Neurologic, cardiovascular, endocrine, pulmonary, and congenital disease and their relative ocular manifestations will be presented.

Systemic Disease and its Ocular Manifestations: Read More [+]

**Rules & Requirements**

**Prerequisites:** 236A

**Hours & Format**
Fall and/or spring: 15 weeks - 2 hours of lecture and 2 hours of discussion per week

**Additional Details**
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Instructor: Harvey

Systemic Disease and its Ocular Manifestations: Read Less [-]

**OPTOM 240 Diagnosis and Treatment of Sensory/Motor Anomalies 3 Units**
Terms offered: Spring 2020, Spring 2017, Spring 2016
Diagnosis and treatment of heterophoria, accommodative, vergence and oculomotor anomalies including sensory anomalies and amblyopia. Rationale and methods for treatment with lenses, prism, occlusion, and vision training. Design and implementation of treatment programs.

Diagnosis and Treatment of Sensory/Motor Anomalies: Read More [+]

**Rules & Requirements**

**Prerequisites:** Vision Science 217 and 219

**Hours & Format**
Fall and/or spring: 15 weeks - 2.5 hours of lecture and 16 hours of laboratory per week

**Additional Details**
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Formerly known as: 140

Diagnosis and Treatment of Sensory/Motor Anomalies: Read Less [-]

**OPTOM 241 Advanced Management and Rehabilitation of Sensory/Motor Anomalies 3 Units**
Terms offered: Fall 2019, Fall 2018, Fall 2017
Advanced diagnosis, prognosis and treatment of strabismus, neurologic oculomotor disorders, amblyopia, and other associated sensory anomalies. Assessment and management of developmental and acquired visual perceptual disorders in relationship to learning disabilities. Design and implementation of treatment programs.

Advanced Management and Rehabilitation of Sensory/Motor Anomalies: Read More [+]

**Rules & Requirements**

**Prerequisites:** 240

**Hours & Format**
Fall and/or spring: 15 weeks - 2.5 hours of lecture and 16 hours of laboratory per week

**Additional Details**
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Formerly known as: 141

Advanced Management and Rehabilitation of Sensory/Motor Anomalies: Read Less [-]

**OPTOM 246 Diagnosis and Treatment of Anterior Segment Ocular Disease 4 Units**
Terms offered: Fall 2015, Fall 2014, Fall 2013
This course series consists of the pathophysiology, pharmacotherapy, and clinical management of systemic and ocular diseases through a combination of lecture and problem-based learning approaches. Disease processes will be emphasized and include cellular injury and repair, inflammation, infection, degeneration, and neoplasia. Neurologic, cardiovascular, endocrine, pulmonary, and congenital disease, and their relative ocular manifestations will be presented. The basic principles of pharmacology will be followed by overviews of drugs used to treat diseases of each system. The role of the optometrist in the health care system will be emphasized.

Diagnosis and Treatment of Anterior Segment Ocular Disease: Read More [+]

**Rules & Requirements**

**Prerequisites:** 236

**Hours & Format**
Fall and/or spring: 15 weeks - 4 hours of lecture per week

**Additional Details**
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Formerly known as: 146

Diagnosis and Treatment of Anterior Segment Ocular Disease: Read Less [-]
**OPTOM 251 Low Vision 2.5 Units**
Terms offered: Fall 2015, Fall 2014, Fall 2013
Epidemiology and etiology of low vision. Optical principles of low vision aids. Optometric examination and treatment of the low vision patient. Interdisciplinary rehabilitation resources, counseling, and referral.
Low Vision: Read More [+]

**Rules & Requirements**

**Prerequisites:** 200D

**Hours & Format**

*Fall and/or spring:* 15 weeks - 2.5 hours of lecture per week

**Additional Details**

**Subject/Course Level:** Optometry/Graduate

**Grading:** Letter grade.

**Formerly known as:** 151

**Low Vision:** Read Less [-]

**OPTOM 256 Diagnosis and Treatment of Posterior Segment Ocular Disease 4 Units**
Terms offered: Spring 2017, Spring 2016, Spring 2015
This course series consists of the pathophysiology, pharmacotherapy, and clinical management of systemic and ocular diseases through a combination of lecture and problem-based learning approaches. Disease processes will be emphasized and include cellular injury and repair, inflammation, infection, degeneration, and neoplasia. Neurologic, cardiovascular, endocrine, pulmonary, and congenital disease and their relative ocular manifestations will be presented. The basic principles of pharmacology will be followed by overviews of drugs used to treat diseases of each system. The role of the optometrist in the health care system will be emphasized.
Diagnosis and Treatment of Posterior Segment Ocular Disease: Read More [+]

**Rules & Requirements**

**Prerequisites:** 246

**Hours & Format**

*Fall and/or spring:* 15 weeks - 4 hours of lecture per week

**Additional Details**

**Subject/Course Level:** Optometry/Graduate

**Grading:** Letter grade.

**Formerly known as:** 160A

**Diagnosis and Treatment of Posterior Segment Ocular Disease:** Read Less [-]

**OPTOM 260A Contact Lenses: Examination Principles and Practice 3 Units**
Terms offered: Spring 2020, Spring 2019, Spring 2018
Examination procedures and instrumentation used in monitoring the ocular response to contact lenses. Contact lens inspection, care, and handling. Physical and optical properties of contact lenses. Fitting contact lenses to the human eye, clinical implications. The Sarver Lecture series in Contact Lenses (12 hours on a Saturday and Sunday.)
Contact Lenses: Examination Principles and Practice: Read More [+]

**Hours & Format**

*Fall and/or spring:* 15 weeks - 2 hours of lecture and 2 hours of laboratory per week

**Additional Details**

**Subject/Course Level:** Optometry/Graduate

**Grading:** Letter grade.

**Formerly known as:** 160A

**Contact Lenses:** Examination Principles and Practice: Read Less [-]

**OPTOM 270B Eyecare Business and Professional Management I 2 Units**
Terms offered: Fall 2015, Fall 2014, Fall 2013
A review of the optometric profession and its opportunities. Debt management, goal setting, professional practice operations including accounting and finance, patient communications, fee calculation, scheduling, office systems flow and operations. Professional ethics, malpractice, and microeconomics as it affects the practice of optometry.
Eyecare Business and Professional Management I: Read More [+]

**Hours & Format**

*Fall and/or spring:* 15 weeks - 2 hours of lecture per week

**Additional Details**

**Subject/Course Level:** Optometry/Graduate

**Grading:** Letter grade.

**Formerly known as:** 156

**Eyecare Business and Professional Management I:** Read Less [-]
OPTOM 270C Eyecare Business and Professional Management II 2 Units
Terms offered: Spring 2017, Spring 2016, Spring 2015
Entrepreneurship, financing alternatives, business loans, human resources, marketing, personal finance, business law as it affects optometry.
Eyecare Business and Professional Management II: Read More [+]
Rules & Requirements
Prerequisites: 270A

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.

Eyecare Business and Professional Management II: Read Less [-]

OPTOM 271A Health Economics, Law and Policy for Optometrists 2 Units
Terms offered: Fall 2019
The course will examine the history of US health care, healthcare systems in other countries, key economic issues that drive health care costs, value-based models of care delivery, current laws and policies that impact optometrist and social determinants of health.
Health Economics, Law and Policy for Optometrists: Read More [+]
Hours & Format
Fall and/or spring: 15 weeks - 1 hour of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Offered for satisfactory/unsatisfactory grade only.

Health Economics, Law and Policy for Optometrists: Read Less [-]

OPTOM 270D Eyecare Business and Professional Management II 2 Units
Terms offered: Spring 2017, Spring 2016, Spring 2015
Entrepreneurship, financing alternatives, business loans, human resources, marketing, personal finance, business law as it affects optometry.
Eyecare Business and Professional Management II: Read More [+]
Rules & Requirements
Prerequisites: 270A

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.

Eyecare Business and Professional Management II: Read Less [-]

OPTOM 272A Health Economics, Law and Policy for Optometrists 2 Units
Terms offered: Fall 2019
The course will examine the history of US health care, healthcare systems in other countries, key economic issues that drive health care costs, value-based models of care delivery, current laws and policies that impact optometrist and social determinants of health.
Health Economics, Law and Policy for Optometrists: Read More [+]
Hours & Format
Fall and/or spring: 15 weeks - 1 hour of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Offered for satisfactory/unsatisfactory grade only.

Health Economics, Law and Policy for Optometrists: Read Less [-]
OPTOM 291A Optometry Research Project 1
Unit
Terms offered: Fall 2015, Fall 2014, Fall 2013
Thesis research for optometry students. Presentation of research results.
Optometry Research Project: Read More [+]
Rules & Requirements
Prerequisites: 290A-290B

Hours & Format
Fall and/or spring: 15 weeks - 1 hour of discussion per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Offered for satisfactory/unsatisfactory grade only. This is part one of a year long series course. A provisional grade of IP (in progress) will be applied and later replaced with the final grade after completing part two of the series.

Instructor: Cohn
Formerly known as: 191A-191B
Optometry Research Project: Read Less [-]

OPTOM 291B Optometry Research Project 1
Unit
Terms offered: Spring 2017, Spring 2016, Spring 2015
Thesis research for optometry students. Presentation of research results.
Optometry Research Project: Read More [+]
Rules & Requirements
Prerequisites: 290A-290B

Hours & Format
Fall and/or spring: 15 weeks - 1 hour of discussion per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Offered for satisfactory/unsatisfactory grade only. This is part two of a year long series course. Upon completion, the final grade will be applied to both parts of the series.

Formerly known as: 190A-190B
Optometry Research Project: Read Less [-]

OPTOM 292A Graduate Optometry Seminar 1
- 3 Units
Terms offered: Fall 2020, Fall 2019, Fall 2018
Graduate seminars on selected topics in clinical optometry.
Graduate Optometry Seminar: Read More [+]
Rules & Requirements
Prerequisites: O.D. degree
Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 0 hours of seminar per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Offered for satisfactory/unsatisfactory grade only.
Graduate Optometry Seminar: Read Less [-]

OPTOM 292B Graduate Optometry Seminar 1
- 3 Units
Terms offered: Spring 2017, Spring 2016, Spring 2015
Graduate seminars on selected topics in clinical optometry.
Graduate Optometry Seminar: Read More [+]
Rules & Requirements
Prerequisites: O.D. degree
Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 0 hours of seminar per week

Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Offered for satisfactory/unsatisfactory grade only.
Graduate Optometry Seminar: Read Less [-]
OPTOM 298A Independent or Group Studies
1 - 6 Units
Terms offered: Fall 2020, Fall 2019, Fall 2018
Directed studies on a selected topic(s) within optometry.
Independent or Group Studies: Read More [+]
Rules & Requirements
Prerequisites: O.D. degree
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 0 hours of independent study per week
Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Independent or Group Studies: Read Less [-]

OPTOM 298B Independent or Group Studies
1 - 6 Units
Terms offered: Spring 2020, Spring 2019, Spring 2018
Directed studies on a selected topic(s) within optometry.
Independent or Group Studies: Read More [+]
Rules & Requirements
Prerequisites: O.D. degree
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 0 hours of independent study per week
Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Independent or Group Studies: Read Less [-]

OPTOM 299A Graduate Optometry Research
2 - 4 Units
Terms offered: Fall 2015, Fall 2014, Fall 2013
Directed research on a selected topic within clinical optometry.
Graduate Optometry Research: Read More [+]
Rules & Requirements
Prerequisites: O.D. Degree
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 0 hours of independent study per week
Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Graduate Optometry Research: Read Less [-]

OPTOM 299B Graduate Optometry Research
2 - 4 Units
Terms offered: Spring 2020, Spring 2017, Spring 2016
Directed research on a selected topic within clinical optometry.
Graduate Optometry Research: Read More [+]
Rules & Requirements
Prerequisites: O.D. Degree
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 0 hours of independent study per week
Additional Details
Subject/Course Level: Optometry/Graduate
Grading: Letter grade.
Graduate Optometry Research: Read Less [-]
OPTOM 430A Optometry Clinics 4 Units
Terms offered: Summer 2017 First 6 Week Session, Summer 2017 Second 6 Week Session, Summer 2016 Second 6 Week Session
Clinical practice in examination techniques and interpretation of clinical data. Primary care optometric exams
Prerequisites: Opt 200D and Opt 200DL
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Summer: 6 weeks - 24 hours of clinic and 3 hours of seminar per week
Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.
Instructor: Revelli

OPTOM 430B Optometry Clinics 9 Units
Terms offered: Fall 2020, Fall 2019, Fall 2018
Examination of patients in a primary care setting, prescribing of optometric therapy, management of emergency procedures, and vision screenings of children and adults.
Prerequisites: 430A
Hours & Format
Summer: 6 weeks - 37 hours of clinic, 1.5 hours of lecture, and 5 hours of seminar per week
8 weeks - 32 hours of clinic, 1 hour of lecture, and 4 hours of seminar per week
Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.
Instructor: Revelli

OPTOM 432 Introduction to Clinical Topics for the New Clinician 2 Units
Terms offered: Summer 2017 10 Week Session
This course emphasizes ocular conditions and diseases that are commonly encountered during patient care. The goal is to improve observational skills for new clinicians by presenting clinical information in a Grand Rounds format and to increase efficiency for comprehensive eye examinations by outlining alternative strategies for examining patients and analyzing clinical data.
Prerequisites: Optom 200D Clinical Examination of the Visual System
Repeat rules: Course may be repeated for credit with advisor consent.
Hours & Format
Summer: 10 weeks - 2 hours of lecture and 1 hour of discussion per week
Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.
Instructor: Ozawa
OPTOM 435 Advanced Procedures in Ocular Disease Diagnosis 2 Units
Terms offered: Fall 2019, Fall 2018, Fall 2017
Instrumentation, techniques, and principles for examination, diagnosis, and treatment of ocular disease. Introduction to optometric informatics related to ocular disease.

Rules & Requirements
Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 1 hour of lecture and 2 hours of laboratory per week

Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.

OPTOM 440A Advanced Optometry Clinic 2.5 Units
Terms offered: Summer 2017 First 6 Week Session, Summer 2017 Second 6 Week Session, Summer 2016 Second 6 Week Session
Optometric examination of patients in the primary care clinic performed independently by student clinicians under supervision of the clinical staff.

Rules & Requirements
Prerequisites: 430C
Repeat rules: Course may be repeated for credit up to a total of 3 times.

Hours & Format
Summer: 6 weeks - 2 hours of seminar and 16 hours of clinic per week

Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.

OPTOM 440B Advanced Optometry Clinic 9 Units
Terms offered: Fall 2020, Fall 2019, Fall 2018
Examination of patients in a primary care setting. Diagnosis, prognosis, treatment, patient management and follow-up.

Rules & Requirements
Prerequisites: 440A and 441A

Hours & Format
Summer: 6 weeks - 2 hours of seminar and 16 hours of clinic per week

Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.

Instructor: Revelli

OPTOM 440C Advanced Optometry Clinic 9 Units
Terms offered: Spring 2020, Spring 2019, Spring 2018
Examination of patients in a primary care setting. Diagnosis, prognosis, treatment, patient management and follow-up.

Rules & Requirements
Prerequisites: 440A and 441A (offered Summer Session only)

Hours & Format
Summer: 6 weeks - 2 hours of seminar and 16 hours of clinic per week

Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.

Instructor: Revelli
**OPTOM 441A Specialty Clinics 2.5 Units**

Terms offered: Summer 2017 First 6 Week Session, Summer 2017 Second 6 Week Session, Summer 2016 Second 6 Week Session

Examination, diagnosis, prognosis, treatment, and management of patients in the specialty clinics.

Specialty Clinics: Read More [+]

**Rules & Requirements**

**Prerequisites:** 430C

**Repeat rules:** Course may be repeated for credit up to a total of 3 times.

**Hours & Format**

**Summer:** 6 weeks - 2 hours of seminar and 16 hours of clinic per week

**Additional Details**

**Subject/Course Level:** Optometry/Other professional

**Grading:** Letter grade.

Specialty Clinics: Read Less [-]

**OPTOM 441B Specialty Clinics 7 Units**

Terms offered: Fall 2015, Fall 2014, Fall 2013

Examination, diagnosis, prognosis, treatment, and/or management of patients in specialty clinics; ocular disease, contact lenses, binocular vision, ophthalmic optics, and environmental and occupational vision.

Specialty Clinics: Read More [+]

**Rules & Requirements**

**Prerequisites:** 440A and 441A (offered Summer Session only)

**Hours & Format**

**Summer:**
6 weeks - 2.5 hours of seminar and 18 hours of clinic per week
8 weeks - 2 hours of seminar and 16 hours of clinic per week

**Additional Details**

**Subject/Course Level:** Optometry/Other professional

**Grading:** Letter grade.

Specialty Clinics: Read Less [-]

**OPTOM 441C Specialty Clinics 7 Units**

Terms offered: Spring 2020, Spring 2019, Spring 2018

Examination, diagnosis, prognosis, treatment, and/or management of patients in specialty clinics; ocular disease, contact lenses, binocular vision, ophthalmic optics, and environmental and occupational vision.

Specialty Clinics: Read More [+]

**Rules & Requirements**

**Prerequisites:** 440A and 441A (offered Summer Session only)

**Hours & Format**

**Summer:**
6 weeks - 2.5 hours of seminar and 18 hours of clinic per week
8 weeks - 2 hours of seminar and 16 hours of clinic per week

**Additional Details**

**Subject/Course Level:** Optometry/Other professional

**Grading:** Letter grade.

Specialty Clinics: Read Less [-]

**OPTOM 450A Grand Rounds and Seminar 2 Units**

Terms offered: Fall 2015, Fall 2014, Fall 2013

Presentation of clinical cases demonstrating basic and advanced optometric care, including diagnosis, treatment, and patient management.

Grand Rounds and Seminar: Read More [+]

**Rules & Requirements**

**Prerequisites:** 440A

**Hours & Format**

**Fall and/or spring:** 15 weeks - 2 hours of discussion per week

**Additional Details**

**Subject/Course Level:** Optometry/Other professional

**Grading:** Letter grade.

**Instructors:** Bailey, Sheedy

**Formerly known as:** 450B-450C

Grand Rounds and Seminar: Read Less [-]
OPTOM 450B Grand Rounds and Seminar 2 Units
Terms offered: Spring 2020, Spring 2019, Spring 2018
Presentation of clinical cases demonstrating basic and advanced optometric care, including diagnosis, treatment, and patient management.
Grand Rounds and Seminar: Read More [+]
Rules & Requirements
Prerequisites: 440A
Hours & Format
Fall and/or spring: 15 weeks - 2 hours of discussion per week
Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.
Instructor: Revelli
Grand Rounds and Seminar: Read Less [-]

OPTOM 452 Current Concepts in Ocular Disease 1 Unit
Terms offered: Spring 2020, Spring 2019, Spring 2018
Recent advances in the detection, diagnosis, and management of ocular disease.
Current Concepts in Ocular Disease: Read More [+]
Rules & Requirements
Prerequisites: 440B and 441B
Hours & Format
Fall and/or spring: 15 weeks - 1 hour of seminar per week
Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.
Current Concepts in Ocular Disease: Read Less [-]

OPTOM 490A Optometric Spanish - Beginner Level I 1 Unit
Terms offered: Prior to 2007
This course provides an introduction to Spanish in its uses in a clinical optometry setting with the Spanish-speaking patient. Basic vocabulary and grammar acquisition and skill building exercises will help the practitioner perform conversations and procedures in simple but accurate and clear communications. The sounds and structures of Spanish, including the present tense and some other verbs will be covered. All materials will be taught and practiced in relation to their practical application in a clinical setting.
Optometric Spanish - Beginner Level I: Read More [+]
Hours & Format
Fall and/or spring: 15 weeks - 1 hour of lecture per week
Summer: 8 weeks - 2 hours of lecture per week
Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Offered for satisfactory/unsatisfactory grade only.
Optometric Spanish - Beginner Level I: Read Less [-]

OPTOM 490B Optometric Spanish - Intermediate Level II 1 Unit
Terms offered: Summer 2008 10 Week Session
This course provides vocabulary and grammar acquisition and skill building for the intermediate to advanced Spanish student who works with Spanish-speaking patients in the field of optometry. Emphasis is on practical, hands-on application of the materials: patient interviewing, doing various aspects of the eye exam, taking a history, and giving diagnostic, treatment, and follow-through information to the patient, with appropriate cultural sensitivity, taking into consideration the socio-cultural background of the patient. The goal is accurate and sophisticated communication.
Optometric Spanish - Intermediate Level II: Read More [+]
Hours & Format
Fall and/or spring: 15 weeks - 1 hour of lecture per week
Summer: 8 weeks - 2 hours of lecture per week
Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Offered for satisfactory/unsatisfactory grade only.
Optometric Spanish - Intermediate Level II: Read Less [-]
OPTOM 499 Supervised Independent Study 1 - 12 Units
Terms offered: Fall 2020, Summer 2020, Spring 2020
Independent study under control of Associate Dean for Student Affairs.
Rules & Requirements
Prerequisites: Consent of instructor
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 1-12 hours of independent study per week
Summer:
6 weeks - 2.5-18 hours of independent study per week
8 weeks - 1.5-22.5 hours of independent study per week
Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Offered for satisfactory/unsatisfactory grade only.
Supervised Independent Study: Read Less [-]

Vision Science
Expand all course descriptions [+ ] Collapse all course descriptions [-]
VIS SCI 24 Freshman Seminars 1 Unit
Terms offered: Spring 2020, Spring 2019, Fall 2018
The Freshman Seminar Program has been designed to provide new students with the opportunity to explore an intellectual topic with a faculty member in a small-seminar setting. Freshman seminars are offered in all campus departments, and topics vary from department to department and semester to semester. Enrollment limited to 15 freshmen.
Freshman Seminars: Read More [+]
Rules & Requirements
Repeat rules: Course may be repeated for credit when topic changes.
Hours & Format
Fall and/or spring: 15 weeks - 1 hour of seminar per week
Additional Details
Subject/Course Level: Vision Science/Undergraduate
Grading/Final exam status: The grading option will be decided by the instructor when the class is offered. Final exam required.
Freshman Seminars: Read Less [-]

VIS SCI 39 Freshman and Sophomore Seminar 1.5 - 3 Units
Terms offered: Fall 2020, Spring 2020, Fall 2019
Freshman and sophomore seminars offer lower division students the opportunity to explore an intellectual topic with a faculty member and a group of peers in a small seminar setting. These seminars are offered in all campus departments; topics vary from department to department and from semester to semester. Enrollment limits are set by the faculty but the suggested limit is 25.
Freshman and Sophomore Seminar: Read More [+]
Rules & Requirements
Repeat rules: Course may be repeated for credit when topic changes.
Hours & Format
Fall and/or spring: 15 weeks - 1.5-3 hours of seminar per week
Additional Details
Subject/Course Level: Vision Science/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final Exam To be decided by the instructor when the class is offered.
Freshman and Sophomore Seminar: Read Less [-]

VIS SCI 84 Sophomore Seminar 1 or 2 Units
Terms offered: Fall 2020, Spring 2020, Fall 2019
Sophomore seminars are small interactive courses offered by faculty members in departments all across the campus. Sophomore seminars offer opportunity for close, regular intellectual contact between faculty members and students in the crucial second year. The topics vary from department to department and semester to semester. Enrollment limited to 15 sophomores.
Sophomore Seminar: Read More [+]
Rules & Requirements
Prerequisites: At discretion of instructor
Repeat rules: Course may be repeated for credit when topic changes.
Hours & Format
Fall and/or spring:
5 weeks - 3-6 hours of seminar per week
10 weeks - 1.5-3 hours of seminar per week
15 weeks - 1-2 hours of seminar per week
Summer:
6 weeks - 2.5-5 hours of seminar per week
8 weeks - 1.5-3.5 hours of seminar and 2-4 hours of seminar per week
Additional Details
Subject/Course Level: Vision Science/Undergraduate
Grading/Final exam status: The grading option will be decided by the instructor when the class is offered. Final exam required.
Sophomore Seminar: Read Less [-]
VIS SCI 199 Supervised Independent Study and Research 1 - 4 Units
Terms offered: Fall 2020, Spring 2020, Fall 2019
Supervised independent study and research. Enrollment restrictions apply; see the Introduction to Courses and Curricula section of this catalog.
Supervised Independent Study and Research: Read More [+]
Rules & Requirements
Prerequisites: Upper division status and consent of instructor, the student's major adviser and the departmental chair
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 0 hours of independent study per week
Summer: 8 weeks - 1.5-7.5 hours of independent study per week
Additional Details
Subject/Course Level: Vision Science/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam required.
Supervised Independent Study and Research: Read Less [-]

VIS SCI 201A Seminar in Vision Science 2 Units
Terms offered: Fall 2020, Fall 2019, Fall 2015
Graduate seminar in vision science.
Seminar in Vision Science: Read More [+]
Rules & Requirements
Prerequisites: Consent of instructor
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 2 hours of seminar per week
Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Offered for satisfactory/unsatisfactory grade only.
Instructor: VS faculty
Seminar in Vision Science: Read Less [-]

VIS SCI 201B Seminar in Vision Science 2 Units
Terms offered: Spring 2020, Spring 2019, Spring 2018
Graduate seminar in vision science.
Seminar in Vision Science: Read More [+]
Rules & Requirements
Prerequisites: Consent of instructor
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 2 hours of seminar per week
Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Offered for satisfactory/unsatisfactory grade only.
Instructor: Gronert
Seminar in Vision Science: Read Less [-]

VIS SCI 203A Geometric Optics 4 Units
Terms offered: Fall 2016, Fall 2015, Fall 2014
Geometrical methods applied to the optics of lenses, mirrors, and prisms. Thin lens eye models, magnification, astigmatism, prism properties of lenses, thick lenses.
Geometric Optics: Read More [+]
Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture, 1 hour of discussion, and 2 hours of laboratory per week
Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Formerly known as: 101
Geometric Optics: Read Less [-]
VIS SCI 203B Optical System and Physical Optics 4 Units
Terms offered: Spring 2016, Spring 2015, Spring 2014
Principles of optical systems, principles and clinical applications of apertures and stops, aberrations and optical instruments. Optics of the eye. Selected topics in physical optics, diffraction, interference, polarization.
Optical System and Physical Optics: Read More [+]

Rules & Requirements
Prerequisites: 203A

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture, 1 hour of discussion, and 2 hours of laboratory per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Formerly known as: 102
Visual Perception Sensitivity: Read Less [-]

VIS SCI 205 Visual Perception Sensitivity 4.5 Units
Terms offered: Fall 2016, Fall 2015, Fall 2014
Visual Perception Sensitivity: Read More [+]

Hours & Format
Fall and/or spring: 15 weeks - 3.5 hours of lecture and 2 hours of laboratory per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Formerly known as: 104
Visual Perception Sensitivity: Read Less [-]

VIS SCI 206A Anatomy and Physiology of the Eye 2 Units
Terms offered: Fall 2015, Fall 2014, Fall 2013
This course focuses on the anatomy and physiology of the eyeball. Overview of the gross anatomy of the eye followed by eye-relevant cellular and molecular biology. Cellular and molecular details of structure and function of each of the various non-neural components.

Anatomy and Physiology of the Eye: Read More [+]

Hours & Format
Fall and/or spring: 7.5 weeks - 4 hours of lecture per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Instructors: Gong, Fleiszig
Anatomy and Physiology of the Eye: Read Less [-]

VIS SCI 206B Anatomy and Physiology of the Eye and Visual System 3 Units
Terms offered: Spring 2020, Spring 2019, Spring 2018
Structure and function of the tissues of the eye, ocular appendages, and the central visual pathways. Basic concepts of physiological, neurological, embryological, and immunological processes as they relate to the eye and vision. Foster an appreciation of the pathophysiology of various disease processes. Convey the importance of anatomy and physiology in the medical approach to ocular disease processes.

Anatomy and Physiology of the Eye and Visual System: Read More [+]

Rules & Requirements
Prerequisites: VIS Sci 206A

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 2.5 hours of lecture and 0.5 hours of laboratory per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Anatomy and Physiology of the Eye and Visual System: Read Less [-]
VIS SCI 206C Anatomy and Physiology of the Eye and Visual System 2 Units
Terms offered: Spring 2020, Spring 2019, Spring 2018
Problem-based learning approach using clinical case examples.
Continuation of 206A-206B.
Rules & Requirements
Prerequisites: 206A-206B
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 7.5 weeks - 4 hours of seminar per week
Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Formerly known as: 106C
Anatomy and Physiology of the Eye and Visual System: Read Less [-]

VIS SCI 206D Neuroanatomy and Neurophysiology of the Eye and Visual System 2 Units
Terms offered: Fall 2015, Fall 2014, Fall 2013
Structure and function of the neurosensory retina, photoreceptors, RPE including blood supply. Current concepts of etiology and management of major retinal conditions. Overview of diagnostic techniques in retinal imaging, electrophysiologic testing and new genetic approaches. Structure and function of the early visual pathway including retinal ganglion cells, optic nerves, lateral geniculate nucleus and visual cortex. Pupillary responses. Specialization in the visual cortex.
Rules & Requirements
Prerequisites: 206A (must be taken concurrently)
Hours & Format
Fall and/or spring: 7.5 weeks - 4 hours of lecture per week
Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Instructors: Flannery, Freeman
Formerly known as: half of 206A
Neuroanatomy and Neurophysiology of the Eye and Visual System: Read More [+]

VIS SCI 215 Visual System Development 2 Units
Terms offered: Fall 2015, Fall 2014, Fall 2013
Rules & Requirements
Prerequisites: 206B
Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture per week
Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Formerly known as: 115
Visual System Development: Read Less [-]

VIS SCI 217 Oculomotor Functions and Neurology 2 Units
Terms offered: Spring 2016, Spring 2015, Spring 2014
Neuro-anatomical pathways for the control of eye position and movement; gaze holding, image stabilization and tracking eye movement systems; oculomotor signs of disorders of the central nervous system (palsies, nystagmus, opthalmoplegia, cog-wheel pursuits, saccadic dysmetria); the near visual-motor response and the synergistic coupling of accommodation and convergence; binocular misalignment (heterophoria and fixation disparity); and presbyopia.
Rules & Requirements
Prerequisites: 203B or consent of instructor
Hours & Format
Fall and/or spring: 15 weeks - 1.5 hours of lecture and 10 hours of laboratory per week
Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Instructors: Flannery, Freeman
Formerly known as: 117
Oculomotor Functions and Neurology: Read Less [-]
VIS SCI 219 Binocular Vision and Space Perception 2 Units
Terms offered: Spring 2016, Spring 2015, Spring 2014
Perception of space, direction, and distance. Binocular retinal correspondence, horopters, differential magnification effects and anomalies of binocular vision development. Sensory vision, local stereopsis, static and dynamic stereopsis, binocular depth cues.
Binocular Vision and Space Perception: Read More [+]

Rules & Requirements
Prerequisites: 203A-203B

Hours & Format
Fall and/or spring: 15 weeks - 1.5 hours of lecture and 10 hours of laboratory per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Formerly known as: 118

VIS SCI 230 Ethics in Scientific Research 2 Units
Terms offered: Spring 2020, Spring 2018, Spring 2016
This seminar will examine a range of ethical issues that arise in the process of doing science. Beginning with the philosophical and social foundations, we will consider the pathogenesis of fraud, statistics and deception, the ethics of authorship and publication, research with human subjects, the use of animals, the definition(s) of misconduct and the difference between misconduct and questionable research practices, the relationship between industry and science, and finally, the responsibilities and obligations of the scientist in society.
Ethics in Scientific Research: Read More [+]

Hours & Format
Fall and/or spring: 15 weeks - 30 hours of seminar per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.

VIS SCI 260A Optical and Neural Limits to Vision 3 Units
Terms offered: Fall 2020, Fall 2019, Fall 2018
The course will provide an overview of the early stage limits to human vision, from the eye’s optics to sampling and processing in the retina. Students will learn basic optical properties of the eye as well as objective and subjective techniques on how to measure limits of human vision.
The class will comprise a combination of lectures and active learning by the students in the form of a project, to be presented at the end of the semester. This is one of the four courses that form the Vision Science core curriculum.
Optical and Neural Limits to Vision: Read More [+]

Rules & Requirements
Repeat rules: Course may be repeated for credit with instructor consent.

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Instructor: Austin Roorda

VIS SCI 260B Introduction to Ocular Biology 3 Units
Terms offered: Fall 2020, Fall 2019, Fall 2018
The course will provide an overview of eye development, anterior eye ocular anatomy and physiology and ocular disease. The course will be a combination of didactic lectures and problem-based learning. This is one of the four courses that form the Vision Science core curriculum.
Introduction to Ocular Biology: Read More [+]

Rules & Requirements
Repeat rules: Course may be repeated for credit with instructor consent.

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Instructor: Suzanne Fleiszig

Introduction to Ocular Biology: Read Less [-]
VIS SCI 260C Introduction to Visual Neuroscience 3 Units
Terms offered: Spring 2020, Spring 2019, Spring 2018
The course will provide an overview of the neuroscience of vision, spanning the entire neural pathway from retinal neurobiology to cortical processing of visual signals. The class will comprise a combination of lectures and active learning by the students in the form of a project, to be presented at the end of the semester. This is one of the four courses that form the Vision Science core curriculum.

Rules & Requirements
Repeat rules: Course may be repeated for credit with instructor consent.

Rules & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Instructor: Michael Silver

Introduction to Visual Neuroscience: Read More [+]

VIS SCI 260D Seeing in Time, Space and Color 3 Units
Terms offered: Spring 2020, Spring 2019, Spring 2018
The course will provide an overview of how we see in time (temporal signal processing, eye motion, motion detection), space (stereo vision, depth perception), and color as well as the anatomical and physiological factors that facilitate these capabilities. The course will be series of didactic lectures. This is one of the four courses that form the Vision Science core curriculum.

Rules & Requirements
Repeat rules: Course may be repeated for credit with instructor consent.

Rules & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Instructor: Martin Banks

Seeing in Time, Space and Color: Read Less [-]

VIS SCI 262 Visual Cognitive Neuroscience 3 Units
Terms offered: Fall 2018, Spring 2016, Spring 2015
The course will provide an overview of visual cognitive neuroscience, drawing from neuroanatomy, neurophysiology in humans and animal models, psychophysics, neuroimaging, neuropharmacology, neuropsychology, and computational models of vision and cognition. Topics will include basic anatomy and physiology of the mammalian visual system, motion perception and processing, depth perception and representation of visual space, brightness and color, object and face recognition, visual attention, developmental and adult plasticity, perceptual learning, multisensory integration, and visual awareness.

Rules & Requirements
Prerequisites: Consent of instructor
Repeat rules: Course may be repeated for credit without restriction.

Rules & Format
Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Instructor: Silver

Visual Cognitive Neuroscience: Read Less [-]

VIS SCI 265 Neural Computation 3 Units
Terms offered: Fall 2020, Fall 2018, Fall 2016
This course provides an introduction to the theory of neural computation. The goal is to familiarize students with the major theoretical frameworks and models used in neuroscience and psychology, and to provide hands-on experience in using these models. Topics include neural network models, supervised and unsupervised learning rules, associative memory models, probabilistic/graphical models, and models of neural coding in the brain.

Rules & Requirements
Prerequisites: Calculus, differential equations, basic probability and statistics, linear algebra, and familiarity with high level programming languages such as Matlab

Rules & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Instructor: Olshausen

Neural Computation: Read Less [-]
VIS SCI C265 Neural Computation 3 Units
Terms offered: Prior to 2007
This course provides an introduction to the theory of neural computation. The goal is to familiarize students with the major theoretical frameworks and models used in neuroscience and psychology, and to provide hands-on experience in using these models. Topics include neural network models, supervised and unsupervised learning rules, associative memory models, probabilistic/graphical models, and models of neural coding in the brain.
Neural Computation: Read More [+]
Rules & Requirements
Prerequisites: Calculus, differential equations, basic probability and statistics, linear algebra, and familiarity with high level programming languages such as Matlab
Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week
Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Instructor: Olshausen
Also listed as: NEUROSC C265

VIS SCI C280 Computer Vision 3 Units
Terms offered: Spring 2020, Spring 2019, Spring 2018
Computer Vision: Read More [+]
Rules & Requirements
Prerequisites: Knowledge of linear algebra and calculus. Mathematics 1A-1B, 53, 54 or equivalent
Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week
Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Instructor: Malik
Also listed as: COMPSCI C280
Computer Vision: Read Less [-]

VIS SCI 298 Group Studies, Seminars, or Group Research 1 - 6 Units
Terms offered: Fall 2020, Spring 2020, Fall 2019
Group studies of selected topics. Advanced studies in various subjects through special seminars on topics to be selected each year, informal groups studying special problems, group participation in experimental problems and analysis.
Group Studies, Seminars, or Group Research: Read More [+]
Rules & Requirements
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 2-6 hours of lecture per week
Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Group Studies, Seminars, or Group Research: Read Less [-]

VIS SCI 299 Research in Vision Science 1 - 12 Units
Terms offered: Fall 2020, Summer 2020 Second 6 Week Session, Spring 2020
Research.
Research in Vision Science: Read More [+]
Rules & Requirements
Prerequisites: Consent of instructor
Hours & Format
Fall and/or spring: 15 weeks - 0 hours of independent study per week
Summer:
6 weeks - 1-16 hours of independent study per week
8 weeks - 1-12 hours of independent study per week
Additional Details
Subject/Course Level: Vision Science/Graduate
Grading: Letter grade.
Research in Vision Science: Read Less [-]
VIS SCI 300 Teaching Methods in Vision Science 1 Unit
Terms offered: Fall 2020, Spring 2020, Fall 2019
Instruction in teaching methods and materials, in vision science and optometry; practice teaching in classrooms and laboratory.
Teaching Methods in Vision Science: Read More [+]

Rules & Requirements
Prerequisites: Graduate standing in vision science
Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 1 hour of lecture per week

Additional Details
Subject/Course Level: Vision Science/Professional course for teachers or prospective teachers
Grading: Offered for satisfactory/unsatisfactory grade only.
Instructor: Silver

Teaching Methods in Vision Science: Read Less [-]

VIS SCI 601 Individual Study for Master's Students 1 - 6 Units
Terms offered: Spring 2020, Spring 2019, Spring 2018
Individual study for the comprehensive requirements in consultation with the adviser in vision science.
Individual Study for Master's Students: Read More [+]

Rules & Requirements
Prerequisites: Consent of instructor
Credit Restrictions: Course does not satisfy unit or residence requirements for master's degree.

Hours & Format
Fall and/or spring: 15 weeks - 0 hours of independent study per week

Additional Details
Subject/Course Level: Vision Science/Graduate examination preparation
Grading: Offered for satisfactory/unsatisfactory grade only.

Individual Study for Master's Students: Read Less [-]

VIS SCI 602 Individual Study for Doctoral Students 1 - 6 Units
Terms offered: Fall 2020, Spring 2020, Fall 2019
Individual study in consultation with the adviser in vision science, intended to provide an opportunity for qualified students to prepare themselves for the various examinations required for the Ph. D.
Individual Study for Doctoral Students: Read More [+]

Rules & Requirements
Prerequisites: Consent of instructor
Credit Restrictions: Course does not satisfy unit or residence requirements.

Hours & Format
Fall and/or spring: 15 weeks - 0 hours of independent study per week

Additional Details
Subject/Course Level: Vision Science/Graduate examination preparation
Grading: Offered for satisfactory/unsatisfactory grade only.

Individual Study for Doctoral Students: Read Less [-]