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 degree 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-Campus Externship Clinics, and Community Outreach Clinics) 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 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 (38.5 units)

<table>
<thead>
<tr>
<th>Fall</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>OPTOM 200A</td>
<td>Clinical Examination of the Visual System [2]</td>
</tr>
<tr>
<td>OPTOM 200AL</td>
<td>Clinical Examination of the Visual System [3]</td>
</tr>
<tr>
<td>OPTOM 499</td>
<td>Supervised Independent Study [1-12]</td>
</tr>
<tr>
<td>VIS SCI 203A</td>
<td>Geometric Optics [4]</td>
</tr>
<tr>
<td>VIS SCI 205</td>
<td>Visual Perception Sensitivity [4.5]</td>
</tr>
<tr>
<td>VIS SCI 206A</td>
<td>Anatomy and Physiology of the Eye [2]</td>
</tr>
<tr>
<td>VIS SCI 206D</td>
<td>Neuroanatomy and Neurophysiology of the Eye and Visual System [2]</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>OPTOM 200B</td>
<td>Clinical Examination of the Visual System [2]</td>
</tr>
<tr>
<td>OPTOM 200BL</td>
<td>Clinical Examination of the Visual System [3]</td>
</tr>
<tr>
<td>OPTOM 222A</td>
<td>Optics of Ophthalmic Lenses [4]</td>
</tr>
<tr>
<td>VIS SCI 203B</td>
<td>Optical System and Physical Optics [4]</td>
</tr>
<tr>
<td>VIS SCI 206B</td>
<td>Anatomy and Physiology of the Eye and Visual System [3]</td>
</tr>
<tr>
<td>VIS SCI 217</td>
<td>Oculomotor Functions and Neurology [2]</td>
</tr>
<tr>
<td>VIS SCI 219</td>
<td>Binocular Vision and Space Perception [2]</td>
</tr>
</tbody>
</table>

Second-Year Curriculum (34 units)

<table>
<thead>
<tr>
<th>Fall</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>OPTOM 200C</td>
<td>Clinical Examination of the Visual System [2]</td>
</tr>
<tr>
<td>OPTOM 200CL</td>
<td>Clinical Examination of the Visual System [2]</td>
</tr>
<tr>
<td>OPTOM 213</td>
<td>Evidence Based Optometry [1]</td>
</tr>
<tr>
<td>OPTOM 222B</td>
<td>Advanced Clinical Optics [2]</td>
</tr>
<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>
</tr>
</tbody>
</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 206B Anatomy and Physiology of the Eye and Visual System [3]

**Third-Year Curriculum (45.5 units)**

**Summer**
OPTOM 430A Optometry Clinics [4]
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 (p. 2)
- Vision Science (p. )

**Optometry**
Expand all course descriptions [+]Collapse all course descriptions [-]
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 2017, Spring 2016, Spring 2015
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
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 2018, Fall 2017, Fall 2016
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 [-]

Clinical Examination of the Visual System: Read More
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 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: 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 2016, Spring 2015, Fall 2014
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.

Rules & Requirements
Prerequisites: 222A

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.

Rules & Requirements
Prerequisites: 226A

OPTOM 226A Systemic Pharmacology 2.5

Units
Terms offered: Fall 2018, Fall 2017, Fall 2016
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).

Rules & Requirements
Prerequisites: Vision Science 206D

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.

Rules & Requirements
Prerequisites: O.D. degree

Repeat rules: Course may be repeated for credit without restriction.
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 More [+]
Graduate General Clinical Practice: 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.

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 More [+]
Graduate Specialty Clinics: 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.

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 More [+]
Graduate Specialty Clinics: Read Less [-]

OPTOM 236A Systemic Disease and its Ocular Manifestations 3 Units
Terms offered: Fall 2018, Fall 2017, Fall 2016
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.

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 More [+]
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

OPTOM 240 Diagnosis and Treatment of Sensory/Motor Anomalies 3 Units
Terms offered: Spring 2017, Spring 2016, Spring 2015
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

OPTOM 241 Advanced Management and Rehabilitation of Sensory/Motor Anomalies 3 Units
Terms offered: Fall 2018, Fall 2017, Fall 2016
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

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
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

OPTOM 260A Contact Lenses: Examination Principles and Practice 3 Units
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.

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 281A Graduate Clinical Rounds 1 - 3 Units**
Terms offered: Fall 2015, Fall 2014, Fall 2013
Presentation and discussion of the diagnosis, etiology, prognosis, and treatment of selected clinical cases.
Graduate Clinical Rounds: 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 Clinical Rounds: 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 [-]

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**OPTOM 292A Graduate Optometry Seminar 1**

- 3 Units

Terms offered: Fall 2018, Fall 2017, Fall 2016

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 [-]

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**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 [-]

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**OPTOM 298A Independent or Group Studies**

1 - 6 Units

Terms offered: Fall 2018, Fall 2017, Fall 2016

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
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 2017, Spring 2016, Spring 2015
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.
Optometry Clinics: Read More [+]
Rules & Requirements
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.
Optometry Clinics: Read Less [-]
OPTOM 430B Optometry Clinics 9 Units
Terms offered: Fall 2018, Fall 2017, Fall 2016
Examination of patients in a primary care setting, prescribing of optometric therapy, management of emergency procedures, and vision screenings of children and adults.
Optometry Clinics: Read More [+]
Rules & Requirements
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
Optometry Clinics: Read Less [-]

OPTOM 430C Optometry Clinics 9 Units
Examination of patients in a primary care setting, prescribing of optometric therapy, management of emergency procedures, and vision screenings of children and adults.
Optometry Clinics: Read More [+]
Rules & Requirements
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: Ozawa
Optometry Clinics: Read Less [-]

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.
Introduction to Clinical Topics for the New Clinician: Read More [+]
Rules & Requirements
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
Introduction to Clinical Topics for the New Clinician: Read Less [-]

OPTOM 435 Advanced Procedures in Ocular Disease Diagnosis 2 Units
Terms offered: Fall 2018, Fall 2017, Fall 2016
Instrumentation, techniques, and principles for examination, diagnosis, and treatment of ocular disease. Introduction to optometric informatics related to ocular disease.
Advanced Procedures in Ocular Disease Diagnosis: 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 and 2 hours of laboratory per week
Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.
Advanced Procedures in Ocular Disease Diagnosis: Read Less [-]
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.
Advanced Optometry Clinic: 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.
Advanced Optometry Clinic: Read Less [-]

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 440B Advanced Optometry Clinic 9 Units
Terms offered: Fall 2018, Fall 2017, Fall 2016
Examination of patients in a primary care setting. Diagnosis, prognosis, treatment, patient management and follow-up.
Advanced Optometry Clinic: Read More [+]
Rules & Requirements
Prerequisites: 440A and 441A
Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.
Instructor: Revelli
Advanced Optometry Clinic: 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 440C Advanced Optometry Clinic 9 Units
Examination of patients in a primary care setting. Diagnosis, prognosis, treatment, patient management and follow-up.
Advanced Optometry Clinic: Read More [+]
Rules & Requirements
Prerequisites: 440A and 441A (offered Summer Session only)
Additional Details
Subject/Course Level: Optometry/Other professional
Grading: Letter grade.
Instructor: Revelli
Advanced Optometry Clinic: Read Less [-]
OPTOM 441C Specialty Clinics 7 Units
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 450B Grand Rounds and Seminar 2 Units
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
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.

Instructors: Bailey, Sheedy
Formerly known as: 450B-450C

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 499 Supervised Independent Study 1 - 12 Units
Terms offered: Fall 2018, Spring 2018, Fall 2017
Independent study under control of Associate Dean for Student Affairs.
Supervised Independent Study: 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 - 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 [+ ] Collaps e all course descriptions [- ]

VIS SCI 24 Freshman Seminars 1 Unit
Offered through: Optometry
Terms offered: Fall 2018, Spring 2018, Fall 2017
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.
VIS SCI 39 Freshman and Sophomore Seminar 1.5 - 3 Units
Offered through: Optometry
Terms offered: Fall 2018, Fall 2017, Fall 2016
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 not required.
Freshman and Sophomore Seminar: Read Less [-]

VIS SCI 84 Sophomore Seminar 1 or 2 Units
Offered through: Optometry
Terms offered: Fall 2018, Spring 2018, Fall 2017
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: 15 weeks - 0 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.
Sophomore Seminar: Read Less [-]

VIS SCI 199 Supervised Independent Study and Research 1 - 4 Units
Offered through: Optometry
Terms offered: Fall 2018, Spring 2018, Fall 2017
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 satisfactory/unsatisfactory grade only. Final exam required.
Supervised Independent Study and Research: Read Less [-]

VIS SCI 201A Seminar in Vision Science 2 Units
Offered through: Optometry
Terms offered: Fall 2015, Fall 2014, Fall 2013
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
Offered through: Optometry
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
Offered through: Optometry
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
Offered through: Optometry
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

Optical System and Physical Optics: Read Less [-]

VIS SCI 205 Visual Perception Sensitivity 4.5 Units
Offered through: Optometry
Terms offered: Fall 2016, Fall 2015, Fall 2014

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
Offered through: Optometry
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
Offered through: Optometry
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
Offered through: Optometry
Problem-based learning approach using clinical case examples. Continuation of 206A-206B.
Anatomy and Physiology of the Eye and Visual System: Read More [+]

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
Offered through: Optometry
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.
Neuroanatomy and Neurophysiology of the Eye and Visual System: Read More [+]

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 Less [-]
VIS SCI 212E Color Vision and Visual Sensitivity 2 Units
Offered through: Optometry
Terms offered: Spring 2017, Spring 2016, Spring 2015
Introduction for graduate students to sensory aspects of light and color vision including: psychophysical methods, spectral response of the eye, mechanisms of sensitivity control, dark adaptation, color discrimination, mechanisms of normal and defective color vision.
Color Vision and Visual Sensitivity: Read More [+]

Rules & Requirements
Prerequisites: Consent of instructor

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.

Color Vision and Visual Sensitivity: Read Less [-]

VIS SCI 212F Spatial and Binocular Vision, Eye Movements, and Motion Perception 2 Units
Offered through: Optometry
Terms offered: Spring 2017, Spring 2016, Spring 2015
Introduction for graduate students to human spatial vision including contrast sensitivity, visual acuity, and spatial localization. Introduction to eye movements, motion perception, and motor and sensory aspects of binocular vision including pursuit, vergence, and saccadic eye movements, accommodation, stereopsis, and binocular space perception. Perception of real and apparent motion.
Spatial and Binocular Vision, Eye Movements, and Motion Perception: Read More [+]

Rules & Requirements
Prerequisites: Consent of instructor

Hours & Format
Fall and/or spring: 6 weeks - 3 hours of lecture per week

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

Spatial and Binocular Vision, Eye Movements, and Motion Perception: Read Less [-]

VIS SCI 212G Molecular Genetics of Vertebrate Eye Development and Diseases 2 Units
Offered through: Optometry
Terms offered: Spring 2017, Spring 2016, Spring 2015
The primary focus of this course is to teach the molecular basis of vertebrate eye development and related disease. This course will cover some of the basic principles of molecular and cell biology, commonly used techniques and experimental approaches, as well as the biological mechanisms for vertebrate eye development and related eye diseases. Recent progress in identifying important ocular genes and the approaches used to identify them will be discussed.
Molecular Genetics of Vertebrate Eye Development and Diseases: Read More [+]

Rules & Requirements
Prerequisites: Graduate student in vision science or consent of instructor in charge

Hours & Format
Fall and/or spring: 5 weeks - 3 hours of lecture per week

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

Molecular Genetics of Vertebrate Eye Development and Diseases: Read Less [-]

VIS SCI 215 Visual System Development 2 Units
Offered through: Optometry
Terms offered: Fall 2015, Fall 2014, Fall 2013
Visual System Development: Read More [+]

Rules & Requirements
Prerequisites: 206B

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

Instructor: Banks, Malik, Schor

Visual System Development: Read Less [-]
**VIS SCI 217 Oculomotor Functions and Neurology 2 Units**

Offered through: Optometry  
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, ophthalmoplegia, cog-wheel pursuits, saccadic dysmetria); the near visual-motor response and the synergistic coupling of accommodation and convergence; oculomotor misalignment (heterophoria and fixation disparity); and presbyopia.

Oculomotor Functions and Neurology: Read More [+]  
**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.  
Formerly known as: 117  
Oculomotor Functions and Neurology: Read Less [-]

**VIS SCI 219 Binocular Vision and Space Perception 2 Units**

Offered through: Optometry  
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  
Binocular Vision and Space Perception: Read Less [-]

**VIS SCI 230 Ethics in Scientific Research 2 Units**

Offered through: Optometry  
Terms offered: Spring 2018, Spring 2016, Spring 2015  
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.  
Ethics in Scientific Research: Read Less [-]

**VIS SCI 260A Optical and Neural Limits to Vision 3 Units**

Offered through: Optometry  
Terms offered: Fall 2018, Fall 2017  
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  
Optical and Neural Limits to Vision: Read Less [-]
VIS SCI 260B Introduction to Ocular Biology
3 Units
Offered through: Optometry
Terms offered: Fall 2018, Fall 2017
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 Neurosciences 3 Units
Offered through: Optometry
Terms offered: 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.

Introduction to Visual Neuroscience: 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: Michael Silver

Introduction to Visual Neuroscience: Read Less [-]

VIS SCI 260D Seeing in Time, Space and Color 3 Units
Offered through: Optometry
Terms offered: 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

Seeing in Time, Space and Color: 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: Martin Banks

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

VIS SCI 262 Visual Cognitive Neuroscience 3 Units
Offered through: Optometry
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.

Visual Cognitive Neuroscience: 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 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**  
**Offered through:** Optometry  
**Terms offered:** Fall 2018, Fall 2016, Fall 2015  
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.  
**Discussion:** 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  
**Neural Computation:** Read Less [-]

**VIS SCI C265 Computer Vision 3 Units**  
**Offered through:** Optometry  
**Terms offered:** Prior to 2007  
**Discussion:** 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**  
**Offered through:** Optometry  
**Terms offered:** Fall 2018, Spring 2018, Fall 2017  
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.  
**Discussion:** 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.  
**Instructor:** Olshausen  
**Also listed as:** NEUROSC C265  
**Group Studies, Seminars, or Group Research:** Read Less [-]
VIS SCI 299 Research in Vision Science 1 - 12 Units
Offered through: Optometry
Terms offered: Fall 2018, Summer 2018 Second 6 Week Session, Spring 2018
Research.
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
Offered through: Optometry
Terms offered: Fall 2018, Spring 2018, Fall 2017
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
Offered through: Optometry
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
Offered through: Optometry
Terms offered: Fall 2018, Spring 2018, Fall 2017
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 [-]