

# 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) (<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)

#### Fall

OPTOM 200A	Clinical Examination of the Visual System [2]
OPTOM 200AL	Clinical Examination of the Visual System [3]
OPTOM 499	Supervised Independent Study [1-12]
VIS SCI 203A	Geometric Optics [4]
VIS SCI 205	Visual Perception Sensitivity [4.5]
VIS SCI 206A	Anatomy and Physiology of the Eye [2]
VIS SCI 206D	Neuroanatomy and Neurophysiology of the Eye and Visual System [2]

#### Spring

OPTOM 200B	Clinical Examination of the Visual System [2]
OPTOM 200BL	Clinical Examination of the Visual System [3]
OPTOM 222A	Optics of Ophthalmic Lenses [4]
VIS SCI 203B	Optical System and Physical Optics [4]
VIS SCI 206B	Anatomy and Physiology of the Eye and Visual System [3]
VIS SCI 217	Oculomotor Functions and Neurology [2]
VIS SCI 219	Binocular Vision and Space Perception [2]

### Second-Year Curriculum (34 units)

#### Fall

OPTOM 200C	Clinical Examination of the Visual System [2]
OPTOM 200CL	Clinical Examination of the Visual System [2]
OPTOM 213	Evidence Based Optometry [1]
OPTOM 222B	Advanced Clinical Optics [2]
OPTOM 226A	Systemic Pharmacology [2.5]
OPTOM 236A	Systemic Disease and its Ocular Manifestations [3]

OPTOM 270B Eyecare Business and Professional Management I [2]

VIS SCI 215 Visual System Development [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 (p. 2)
- Vision Science (p. )

### Optometry

Expand all course descriptions [+]Collapse all course descriptions [-]

### 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 funds; 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

### 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 funds; anterior 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 spherical 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.

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 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 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 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:** 156

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.

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 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 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 281B Graduate Clinical Rounds 1 - 3 Units

Terms offered: Spring 2017, Spring 2016, Spring 2015

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 [\[-\]](#)

## **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.

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 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.

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**

Terms offered: Spring 2020, Spring 2019, Spring 2018

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 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 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.

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 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.

Advanced Optometry Clinic: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 440A and 441A

### Hours & Format

### Additional Details

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

**Grading:** Letter grade.

**Instructor:** Revelli

Advanced Optometry Clinic: Read Less [\[-\]](#)

## 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.

Advanced Optometry Clinic: Read More [\[+\]](#)

### Rules & Requirements

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

### Hours & Format

### Additional Details

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

**Grading:** Letter grade.

**Instructor:** Revelli

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 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.

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 [\[+\]](#)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

Optical System and Physical Optics: Read Less [\[-\]](#)

## VIS SCI 205 Visual Perception Sensitivity 4.5 Units

Terms offered: Fall 2016, Fall 2015, Fall 2014

Psychophysical basis for clinical tests in acuity, perimetry, and color vision. The visual stimulus and photometry. Visual receptors. Psychophysical method and visual threshold. Light sensitivity. Contrast sensitivity. Light and dark adaptation. Temporal and spatial properties of visual function. Color vision and abnormalities. Changes with age and disease. Visual illusion. Basis for advanced diagnostic procedures.

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.

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

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 [+]

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 215 Visual System Development 2 Units

Terms offered: Fall 2015, Fall 2014, Fall 2013

Development of the eye and visual system. Normal development of the eye, retina, and central visual pathways. Effects of visual deprivation.

Assessment of optical and visual function in human infants. Refraction and refractive error in infants and children. Development of visuomotor function, spatial vision, color vision, binocular vision, and depth perception.

Visual System Development: Read More [+]

### 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, ophthalmoplegia, 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.

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

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

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.

Ethics in Scientific Research: Read Less [\[-\]](#)

## 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

Optical and Neural Limits to Vision: Read Less [\[-\]](#)

## 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.

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

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

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

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

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.

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

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

Neural Computation: Read Less [\[-\]](#)

## VIS SCI C280 Computer Vision 3 Units

Terms offered: Spring 2020, Spring 2019, Spring 2018

Paradigms for computational vision. Relation to human visual perception. Mathematical techniques for representing and reasoning, with curves, surfaces and volumes. Illumination and reflectance models. Color perception. Image segmentation and aggregation. Methods for bottom-up three dimensional shape recovery: Line drawing analysis, stereo, shading, motion, texture. Use of object models for prediction and recognition.

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 [\[-\]](#)