Vision Science

Overview

Vision is one of the most valuable sensory modalities. It is also the source of a rich array of research questions relating to how we see, how and why vision fails, and what can be done about it. Investigators in Vision Science conduct human and animal research and modeling, yielding cutting-edge discoveries and applications in disciplines that include molecular genetics, clinical care, adaptive optics, neurobiology, cell biology, infectious disease, bioengineering, perception, and public health.

This PhD program (http://vision.berkeley.edu) emphasizes the interdisciplinary nature of vision science research through broad exposure to the basic concepts and techniques used in specialized fields. Engaged in both laboratory-based and clinical research, our students (http://vision.berkeley.edu/?page_id=37) are working with faculty (http://vision.berkeley.edu/?cat=2) advisers whose research matches their own interests. Current research topics include Biomedical Optics, Perception and Visual Cognition, Molecular and Cell Biology, Neuroscience, Computational Vision, Genetics, Immunology, Microbiology, and Clinical Science.

Vision Science alumni (http://vision.berkeley.edu/?page_id=2019) are represented on the faculty of world-class universities — in medical schools, schools of optometry, and a wide range of other disciplines spanning psychology, physiology, bioengineering, and ophthalmology. Many others hold research positions in private institutes and federally sponsored agencies, including NASA and the NIH. Even more can be found in the research and development divisions of industry. Ophthalmic and biotechnology companies are among the major recruiters of our graduates.

Due to the interdisciplinary nature of the program, we accept students with various backgrounds including psychology, optometry, engineering, computer science, physics, chemistry, biophysics, neuroscience, mathematics, molecular and cell biology, and integrative biology. Because this program is designed to develop research scientists, it is also important that applicants are familiar with an experimental lab setting.

Undergraduate Program

There is no undergraduate program in Vision Science.

Graduate Program

Vision Science (http://guide.berkeley.edu/archive/2019-20/graduate/degree-programs/vision-science): PhD

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 aperatures 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 [+]
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, opthalmoplegia, cog-wheel pursuits, saccadic dysmetria); the near visual-motor response and the synergistic coupling of accommodation and convergence; binocular misalignment (heterophoria and fixation disparity); and presbyopia.
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 [-]