

Landscape Architecture

Bachelor of Arts (BA)

Berkeley's undergraduate curriculum in Landscape Architecture centers upon creative and ecologically-tuned design and introduces students to the breadth of knowledge common to the profession. This program leads to the Bachelor of Arts (BA) degree in Landscape Architecture and provides the necessary education for students interested in entry-level professional practice.

At the heart of the undergraduate curriculum are three core studios: LD ARCH 101, LD ARCH 102, and LD ARCH 103. The core studios ensure that undergraduate students benefit from the department's full range of interests and expertise.

Licensure and Accreditation

The BA degree is certified by the State of California and counts as part of the education/experience requirement of the Uniform National Examination (U.N.E.) as well as for the Landscape Architects Registration Examination (L.A.R.E.) for licensure. Please visit the Landscape Architects Technical Committee (<http://www.latc.ca.gov/>) and the Council of Landscape Architectural Registration Boards (<https://www.clarb.org/>) for more information about licensure in California.

Admission to the Major

Students must declare one of the CED majors at the time of application to the college; however, current UC Berkeley students may apply to change colleges into CED. Transfer applicants must complete two years worth of lower division coursework to be considered for admission to CED. For information regarding admission to the major for first-year, transfer students, and current students who wish to change majors or colleges, please see the College of Environmental Design (CED) page (<http://guide.berkeley.edu/archive/2023-24/undergraduate/colleges-schools/environmental-design/#choosingamajortext>) in this Guide or the CED website (<http://ced.berkeley.edu/admissions/undergraduate/>).

History and Theory of Landscape Architecture and Environmental Design Minor Program

This program introduces students to conceptual issues of landscape architecture. A letter grade of C- or higher in ENV DES 1, LD ARCH 1, or LD ARCH 12 is required to declare the minor. To declare, students must submit the CED Request to Add Minor Form (<https://ced.berkeley.edu/students/undergraduate-advising/forms-documents/>), available on the CED website. Open to all majors at UC Berkeley except Landscape Architecture.

Other Minors Offered by the Department of Landscape Architecture and Environmental Planning

The Department sponsors a minor in Sustainable Design, in conjunction with the Department of Architecture. For further information regarding this minor program, please see the program's page in this Guide (<http://guide.berkeley.edu/archive/2023-24/undergraduate/degree-programs/sustainable-design/>).

In addition to the University, campus, and college requirements, listed on the College Requirements tab, students must fulfill the below requirements specific to their major program.

The Landscape Architecture major requirements differ by students' admit year to UC Berkeley. The major requirements listed below are the most recent. In the Berkeley Academic Guide Archive (<http://guide.berkeley.edu/archive/2023-24/archive/>), refer to the year you were admitted to UC Berkeley for your major requirements.

General Guidelines

1. All lower division courses taken in fulfillment of major requirements must be completed with a grade of C- or better.
2. Courses taken to fulfill lower division major requirements may also be used to fulfill Seven-Course Breadth.
3. A minimum grade point average (GPA) of 2.0 must be maintained in upper and lower division courses used to fulfill the major requirements.
4. A minimum overall GPA of 2.0 for all courses taken at UC Berkeley is required for graduation.
5. Courses used to fulfill an upper division major requirement may not simultaneously fulfill a breadth requirement.
6. Up to two upper division courses taken at another institution, including an approved study abroad program, may be applied to the major requirements below (if transferable and approved in advance).

For information regarding residence and unit requirements, please see the College Requirements tab.

Lower Division Major Requirements

Three courses

LD ARCH 1	Drawing a Green Future: Fundamentals of Visual Representation and Creativity	4
Physical Science: Select one course from the following ¹		
CHEM 1A	General Chemistry [3]	
EPS 3	The Water Planet [3]	
EPS 7	Introduction to Climate Change [3]	
EPS 10	Earth's Greatest Volcanic Eruptions [3]	
EPS 20	Earthquakes in Your Backyard [3]	
EPS C20	Earthquakes in Your Backyard [3]	
EPS 50	The Planet Earth [4]	
EPS 80	Environmental Earth Sciences [3]	
EPS 81	Extreme Weather and Climate [3]	
EPS 82	Oceans [3] (This course can be used for either Phys Sci or Bio Sci but not both.)	
EPS N82	Introduction to Oceans [3] (This course can be used for either Phys Sci or Bio Sci but not both.)	
ESPM 15	Introduction to Environmental Sciences [3] (This course can be used for either Phys Sci or Bio Sci but not both.)	
GEOG 40	Introduction to Earth System Science [4] (This course can be used for either Phys Sci or Bio Sci but not both.)	
L & S C70Y	Earthquakes in Your Backyard [3]	
PHYSICS 7A	Physics for Scientists and Engineers [4]	
PHYSICS 8A	Introductory Physics [4]	

PHYSICS 10 Descriptive Introduction to Physics [3]

PHYSICS C10 Descriptive Introduction to Physics [3] (Also listed as L & S C70V)

Biological Science: Select one course from the following (Note: courses from the above PS breadth list that can be used for BS breadth instead include EPS 82, EPS N82, ESPM 15, and GEOG 40):²

ANTHRO 1 Introduction to Biological Anthropology [4]

BIOLOGY 1B General Biology Lecture and Laboratory [4]

ESPM 2 The Biosphere [3]

ESPM 6 Environmental Biology [3]

ESPM C10 Environmental Issues [4] (Also listed as L & S C30V)

ESPM 40 Insects and Human Society [3]

ESPM 42 Natural History of Insects [3]

ESPM 105A Sierra Nevada Ecology [4]

INTEGBI C32 Bioinspired Design [3] (Also listed as L & S C30Z)

INTEGBI 42 Primate Biology [3]

LD ARCH 12 Environmental Science for Sustainable Development [4]

NUSCTX 11 Introduction to Toxicology [3]

PLANTBI 40 The (Secret) Life of Plants [3]

Upper Division Major Requirements

Eleven courses.

LD ARCH 101	Fundamentals of Landscape Design	5
LD ARCH 102	Case Studies in Landscape Design	5
LD ARCH 103	Energy, Fantasy, and Form	5
LD ARCH C110A	Ecological Analysis	4
LD ARCH 112	Landscape Plants: Identification and Use	4
LD ARCH 120	Topographic Form and Design Technology	3
LD ARCH 121	Design in Detail: Introduction to Landscape Materials and Construction	4
LD ARCH 133	Drawn from the Field (Formerly 134A) ³	3
LD ARCH 134B	Drawing Workshop II	3
LD ARCH 135	Sacred Landscapes	3
LD ARCH 170	History and Literature of Landscape Architecture	3

¹ This course simultaneously satisfies the Physical Science breadth requirement (see the College Requirements tab).

² This course simultaneously satisfies the Biological Science breadth requirement (see the College Requirements tab).

³ LD ARCH 133 can be waived for students who complete LD ARCH 1 at UC Berkeley

Students who have a strong interest in an area of study outside their major often decide to complete a minor program.

General Guidelines

1. All minors must be declared no later than one semester before a student's Expected Graduation Term (EGT).
2. A letter grade of C- or higher in ENV DES 1, LD ARCH 1, or LD ARCH 12 is required to declare the minor. To declare, students must submit the CED Minor Declaration Form (<https://>

ced.berkeley.edu/advising/undergraduate-advising/undergraduate-students/major-minor-requirements/), available on the CED website.

- a. DEADLINE TO SUBMIT FORM: Prior to the start of a student's final semester.
3. Each course used to fulfill minor requirements must be completed with a letter grade of C- or above.
 4. Students must earn a 2.0 GPA in the upper division requirements for the minor.
 5. Any course used in fulfillment of minor requirements may also be used to fulfill major and upper division CED non-major requirements.
 6. Courses used to fulfill a breadth requirement may also be used to satisfy minor requirements.
 7. Students may apply the non-CED version of a CED cross-listed course towards the minor.
 8. Students may use up to two courses taken abroad to fulfill upper division minor requirements, with faculty approval of the individual courses.

History and Theory of Landscape Architecture and Environmental Planning Minor Requirements

Lower Division (Choose one from list)

ENV DES 1	Introduction to Environmental Design	3
LD ARCH 1	Drawing a Green Future: Fundamentals of Visual Representation and Creativity	4
LD ARCH 12	Environmental Science for Sustainable Development	4

Upper Division (Choose five from list)

LD ARCH C110A	Ecological Analysis (formerly LD ARCH 110)	4
LD ARCH 111	Plants in Design	3
LD ARCH 119	Flood Risk Management	3
LD ARCH 122	Hydrology for Planners	4
LD ARCH 130	Sustainable Landscapes and Cities	4
LD ARCH 140	Social and Psychological Factors in Open Space Design	3
LD ARCH 154	Special Topics in Landscape Architecture and Environmental Planning (Must be taken for 3 units)	3
LD ARCH 170	History and Literature of Landscape Architecture	3
LD ARCH/AMERSTD C171	The American Designed Landscape Since 1850	3
LD ARCH C177	GIS and Environmental Spatial Data Analysis	4
LD ARCH C188	Geographic Information Science	4

For College Requirements, please refer to the College of Environmental Design (<http://guide.berkeley.edu/archive/2023-24/undergraduate/colleges-schools/environmental-design/#collegerequirementstext>).

Each student's plan will vary, depending on interests. Students should see their advisor if they are interested in applying for graduate school, studying abroad, attending summer school, pursuing a minor or second major, or anything else.

For more detailed information regarding the courses listed below (e.g., elective information, GPA requirements, etc.), please see the Major Requirements tab.

			Freshman
	Fall Units	Spring Units	
ENV DES 1		3 ENV DES 5	4
Bio Sci for Major (Breadth #1: BIO SCI)		3-4 Reading & Composition A	4-6
Breadth #2		3-4 Phys Sci for Major (Breadth #3: PHYS SCI)	3-4
University Elective (if needed to reach 12 units)		3-4 University Elective (if needed to reach 12 units)	1-2
12-15		12-16	
			Sophomore
	Fall Units	Spring Units	
Reading & Composition B		4 LD ARCH 1	4
Breadth #4		3-4 Breadth #6	3-4
Breadth #5		3-4 Breadth #7	3-4
University Elective (if needed to reach 12 units)		2 University Elective, if needed	2-3
12-14		12-15	
			Junior
	Fall Units	Spring Units	
LD ARCH 101		5 LD ARCH 102	5
LD ARCH C110A		4 LD ARCH 112	4
LD ARCH 133 ¹		3 LD ARCH 170	3
LD ARCH 134B		3 CED Upper Div Non-Major #1	2-4
15		14-16	
			Senior
	Fall Units	Spring Units	
LD ARCH 103		5 LD ARCH 121	4
LD ARCH 120		3 LD ARCH 135	3
CED Upper Div Non-Major #2		2-4 CED Upper Div Non-Major #3	2-4
American Cultures (or university elective, if needed to reach 12 units)		2-4 LD ARCH 160 or 111 (recommended)	3
12-16		12-14	
Total Units: 101-121			

¹ LD ARCH 1 at UCB satisfies LDARCH 133.

² Students must complete 120 units to graduate.

Learning Goals of the Major

- To communicate effectively in graphic, written, and verbal formats.
- To understand the relationship of the history and theory of landscape architecture.
- To acquire knowledge of the basic fundamentals of environmental design, particularly the implications of social and natural factors.
- To apply design principles in a range of sites and scales.

Major Maps help undergraduate students discover academic, co-curricular, and discovery opportunities at UC Berkeley based on intended major or field of interest. Developed by the Division of Undergraduate Education in collaboration with academic departments, these experience maps will help you:

- **Explore** your major and gain a better understanding of your field of study
- **Connect** with people and programs that inspire and sustain your creativity, drive, curiosity and success
- **Discover** opportunities for independent inquiry, enterprise, and creative expression
- **Engage** locally and globally to broaden your perspectives and change the world
- **Reflect** on your academic career and prepare for life after Berkeley

Use the major map below as a guide to planning your undergraduate journey and designing your own unique Berkeley experience.

View the Landscape Architecture Major Map PDF. (https://ue.berkeley.edu/sites/default/files/landscape_architecture.pdf)

The CED Office of Undergraduate Advising provides a wide array of programmatic and individual advising services to prospective and current students as well as to students in other colleges who are pursuing CED minors or taking CED courses. The professional advising team assists students with a range of issues including course selection, academic decision-making, achieving personal and academic goals, and maximizing the Berkeley experience.

Advising Staff

Architecture Major Advisor: Mel Barbers

250 Bauer Wurster Hall
mbarbers@berkeley.edu

Landscape Architecture Major Advisor: Kristian Dawson

250 Bauer Wurster Hall
kristian.dawson@berkeley.edu

Sustainable Environmental Design Major Advisor: Heather Grothjan

250 Bauer Wurster Hall
heather.grothjan@berkeley.edu

Urban Studies Major Advisor: Kristian Dawson

250 Bauer Wurster Hall
kristian.dawson@berkeley.edu

College Evaluator: Heather Grothjan

250 Bauer Wurster Hall
heather.grothjan@berkeley.edu

Undergraduate Advising Director: Omar Ramirez

250 Bauer Wurster Hall
oramirez@berkeley.edu

Associate Dean for Undergraduate Studies: Kyle Steinfeld

345 Bauer Wurster Hall
ksteinf@berkeley.edu

Advising Office

Fall/spring: Monday through Friday, 10 to noon (office opens at 9 a.m.) & 1 to 4 p.m.

Summer: Monday through Friday, 10 to noon & 1 to 3 p.m.

Address

Office of Undergraduate Advising

College of Environmental Design
250 Bauer Wurster Hall #1800
University of California
Berkeley, CA 94720-1800
cedadvising@berkeley.edu

CED Career Services

The CED Career Services Center (CSC) offers personalized career counseling, a yearly CED Career Fair, and a wide variety of professional development workshops on topics such as licensure, internships, and applying for graduate school. To schedule an appointment with the Career Counselor or for more information on CED CSC, please click here (<http://ced.berkeley.edu/ced/students/career/>).

Office of Undergraduate Advising (<http://ced.berkeley.edu/ced/students/undergraduate-advising/>)

- Current Students (<https://ced.berkeley.edu/advising/undergraduate-advising/undergraduate-students/>)
- Newly-Admitted Students (<https://ced.berkeley.edu/advising/undergraduate-advising/undergraduate-students/newly-admitted-students/>)
- CED Major & Minor Requirements (<https://ced.berkeley.edu/advising/undergraduate-advising/undergraduate-students/major-minor-requirements/>)
- Graduation and Commencement (<https://ced.berkeley.edu/advising/undergraduate-advising/undergraduate-students/graduation-commencement/>)
- Undergraduate Advising Services (<https://ced.berkeley.edu/advising/undergraduate-advising/>)
- Articulation (<https://ced.berkeley.edu/admissions/undergraduate-admissions/articulation/>)
- CED Undergraduate Program Policies (<https://ced.berkeley.edu/advising/undergraduate-advising/undergraduate-students/policies/>)
- Forms and Documents (<https://ced.berkeley.edu/advising/forms-documents/>)

Mission

The College of Environmental Design (CED) Office of Undergraduate Advising:

- **Supports** students holistically as they earn their degree,
- **Advocates** for just and equitable policies and practices,
- **Connects** current and prospective students with resources and opportunities,
- **Fosters** a sense of belonging and community.

Advising Values

The CED Office of Undergraduate Advising aspires to the following core values:

Student-Centered

We provide support services centered on student self-actualization. We aim to hold a welcoming space in which students are encouraged to explore their minds and their hearts, do their best work, realize their talents and passions, and achieve their goals. We put the student voice and experience first.

Justice & Equity

We actively seek to eradicate all forms of individual and institutionalized discrimination and oppression. We aim to provide students with an equitable experience in complete appreciation of their identities, economic status, and immigration status.

Health & Well-Being

We strive to build and sustain a culture in which our community can thrive in all aspects of life: intellectual, emotional, social, physical, occupational, spiritual and environmental.

Courage & Vulnerability

By learning from our own experiences, educating ourselves on developments in the field, collaborating with our communities, and taking strategic risks, we aim to improve our advising services and the student experience. We are committed to continuous self-reflection, growth, and development.

Student Groups and Organizations

The college provides opportunities for students to be involved in student chapters of professional organizations, such as the American Institute of Architects (AIA), the American Society of Landscape Architects (ASLA), as well as other student groups like the Chican@/Latin@ Architecture Student Association (CASA), Global Architecture Brigades, and more. For information regarding student groups, please see the Student Organizations page of the CED website (<https://ced.berkeley.edu/resources/student-organizations/>).

Study Abroad

The College of Environmental Design (CED) encourages all undergraduates in the college to study abroad. Whether students are interested in fulfilling general education requirements, taking courses related to their major/career, or simply living and studying in a country that is of interest to them, Berkeley Study Abroad will work with students to make it happen. For information about Study Abroad programs, please see the Berkeley Study Abroad website (<http://studyabroad.berkeley.edu/>).

CED Career Services

The CED Career Services Center (CSC) offers personalized career counseling, a yearly CED Career Fair, and a wide variety of professional-development workshops on topics such as licensure, internships, and applying for graduate school. For further information, please see the CED Career Services website (<http://ced.berkeley.edu/ced/students/career/>).

Prizes and Awards

CED offers a number of annual prizes, awards, scholarships, fellowships, and grants to its currently enrolled students. Some of these prizes and awards are college-wide, and some are geared toward students in specific majors. For general information regarding CED prizes and awards, including application instructions and a deadline calendar, please click here (<http://ced.berkeley.edu/ced/students/prizes/>).

CED Events and Exhibits Calendar

CED and Wurster Hall is home to a variety of events, lectures, and exhibitions that welcome professors, professionals, and friends to the college to discuss and celebrate the community and professions. Through events and media CED is constantly creating ways to keep

the college connected and up-to-date. To view this calendar, please click here (<http://ced.berkeley.edu/events-media/events/>).

CED on Facebook (<https://www.facebook.com/groups/59611725522/>)

CED Lecture Series

The departments of Architecture, City and Regional Planning, and Landscape Architecture and Environmental Planning each sponsor lecture series, which offers students the opportunity to hear internationally-acclaimed speakers. These speakers often also participate in classes and seminars as part of their visit to campus. For a schedule of speakers and events in these lecture series, please see the CED website (<http://ced.berkeley.edu/events-media/lecture-series/>).

WursterLife

WursterLife (<https://ced.berkeley.edu/ced/alumni-friends/wursterlife/>) is a closed-network platform that enables CED students and alumni from across the globe to connect with classmates, find alumni by practice area, geographic region, affinity group, or shared interest, share professional updates, news, photos, events, and jobs, enhance your career through your alumni connections, and find ways to stay engaged with the UC Berkeley College of Environmental Design.

Research Opportunities, Internships, Public Service, and Volunteer Opportunities

Check out the CED Office of Undergraduate Advising website (<http://ced.berkeley.edu/ced/students/undergraduate-advising/>) for additional opportunities.

Landscape Architecture

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

LD ARCH 1 Drawing a Green Future: Fundamentals of Visual Representation and Creativity 4 Units

Terms offered: Summer 2024 8 Week Session, Spring 2024, Summer 2023 8 Week Session

This introductory studio course is open to all undergraduate students in the University, who want to investigate the process of drawing as a method to learn how to perceive, observe and represent the environment. This studio will encourage visual thinking as a formative tool for problem solving that provides a means to envision a sustainable future. The focus will be on the critical coordination between hand, mind and idea.

Drawing a Green Future: Fundamentals of Visual Representation and Creativity: Read More [+]

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 6 hours of studio per week

Summer: 8 weeks - 4 hours of lecture and 6 hours of studio per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructor: Sullivan

Drawing a Green Future: Fundamentals of Visual Representation and Creativity: Read Less [-]

LD ARCH 12 Environmental Science for Sustainable Development 4 Units

Terms offered: Fall 2024, Summer 2024 8 Week Session, Fall 2023

The scientific basis of sustainability, explored through study of energy, water, food, natural resources, and built environment. Physical/ecological processes and systems, and human impacts from the global scale to local energy/resource use. Energy and water audits, opportunities to increase sustainability of processes/practices. Discussion/lab section involves field data collection/analysis (e.g., habitat characteristics and macroinvertebrate communities in local streams, measurement of atmospheric particulate matter concentrations, measurement of water savings from updated irrigation technologies) and a final, integrative sustainability assessment project.

Environmental Science for Sustainable Development: Read More [+]

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Summer: 8 weeks - 6 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Environmental Science for Sustainable Development: Read Less [-]

LD ARCH 98 Directed Group Study for Freshmen and Sophomores 1 - 4 Units

Terms offered: Fall 2015, Spring 2013, Spring 2012

Supervised group studies of various topics relevant to department that are not covered in depth by other courses. Topics may be initiated by students. Open to students in good standing who, in consultation with a faculty sponsor, present a proposal with clearly formulated objectives and means of implementation. Intended for exceptional students. Topics vary from semester to semester.

Directed Group Study for Freshmen and Sophomores: Read More [+]

Rules & Requirements

Prerequisites: Department chair must approve written proposal

Credit Restrictions: Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.

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

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of directed group study per week

Summer:

6 weeks - 2.5-10 hours of directed group study per week

8 weeks - 1.5-7.5 hours of directed group study per week

10 weeks - 1.5-6 hours of directed group study per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

Directed Group Study for Freshmen and Sophomores: Read Less [-]

LD ARCH 101 Fundamentals of Landscape Design 5 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

This studio introduces students to the programmatic, artistic, and technical aspects of land form and topographic adjustments to accommodate human use. Topics include pedestrian and vehicular circulation, conservation and addition of plant materials, movement of water, recreation use, and creation of views. Sculptural land forms will be emphasized through the use of topographic plans, sections, and contour models.

Fundamentals of Landscape Design: Read More [+]

Rules & Requirements

Prerequisites: Environmental Design 11A-11B or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 6 hours of studio per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

Fundamentals of Landscape Design: Read Less [-]

LD ARCH 102 Case Studies in Landscape Design 5 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

This studio stresses the shaping and coordination of ideas from initial concept to complete design product. A product(s) of intermediate scale and complexity (such as a garden, small park, plaza, or campus courtyard) will be developed in detail including the selection of planting, selection of construction materials, and topographic design. Lecture modules on selected professional topics are integrated into this course.

Case Studies in Landscape Design: Read More [+]

Rules & Requirements

Prerequisites: 101 or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 6 hours of studio per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

Instructor: Kullmann

Case Studies in Landscape Design: Read Less [-]

LD ARCH 103 Energy, Fantasy, and Form 5 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

This is an undergraduate studio with a central focus on climate modification for energy conservation. We will research historical precedents in order to develop new garden forms for passive green designs. We will also explore how past cultures integrated metaphysics into their gardens as an adjunct to microclimate and habitat design. The contemporary landscape should be a balanced interweaving of proportion, function, comfort, energy conservation, and enlightenment. Additionally, we will study the choreography of space and investigate how to animate the landscape through the creative interpretation of text and film. Many new and exciting opportunities lie ahead for the creation of garden forms that not only conserve energy, but are also works of art and places of spiritual renewal.

Energy, Fantasy, and Form: Read More [+]

Rules & Requirements

Prerequisites: 101, 102, Environmental Design 11A-11B, (Arch 100A or 100B for Architecture students) or by consent of instructor

Repeat rules: Course may be repeated for credit up to a total of 8 units.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 6 hours of studio per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

Instructor: Sullivan

Energy, Fantasy, and Form: Read Less [-]

LD ARCH 110 Ecological Analysis 3 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

Analysis of environmental factors, ecosystem functions, and ecosystem dynamics, as related to decision-making for landscape planning and design.

Ecological Analysis: Read More [+]

Hours & Format

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

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: McBride

Ecological Analysis: Read Less [-]

LD ARCH 110L Ecological Analysis Laboratory 2 Units

Terms offered: Fall 2020, Fall 2019, Fall 2018

Introduction to field techniques for assessment of landscape factors. Factors include topography, geology, climate, soil, hydrology, flora, vegetation, and wildlife.

Ecological Analysis Laboratory: Read More [+]

Rules & Requirements

Prerequisites: Landscape Architecture 110 (may be taken concurrently)

Hours & Format

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

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: McBride

Ecological Analysis Laboratory: Read Less [-]

LD ARCH C110A Ecological Analysis 4 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

This course focuses on natural factors of the environment that are fundamental to ecosystem management, land use planning and landscape design and their relationships to one another in different terrestrial ecosystems, from predominantly natural to predominantly anthropogenic. Lectures explore the key concepts on ecosystem structure, function and dynamics and discuss different types of ecological data, their interpretation and visualization that can aid in landscape research, planning and design workflow. Laboratory sections advance lecture topics by providing hands-on training in common types of ecosystem analyses using quantitative methods and geospatial tools. Ecological Analysis: Read More [+]

Objectives & Outcomes

Course Objectives: Develop an understanding of natural factors of the environment that are fundamental to ecosystem management, landscape design and land use planning and common approaches for their assessment and analysis of their relationships to one another.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Also listed as: ESPM C110A

Ecological Analysis: Read Less [-]

LD ARCH 111 Plants in Design 3 Units

Terms offered: Fall 2024, Spring 2022, Spring 2021

Through lecture, research, and studio assignments, this course introduces the use of plants as design elements in the landscape, from the urban scale to the site-specific scale, focusing on the public open space. By analyzing historic, contemporary, and Bay Area examples, the course examines the spatial, visual, and sensory qualities of vegetation, as well as the interplay with ecological functions and engineering uses of plants.

Plants in Design: Read More [a+]

Hours & Format

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

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Plants in Design: Read Less [-]

LD ARCH 112 Landscape Plants: Identification and Use 4 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

This course is an introduction to the identification and recognition, as well as design applications and uses, of plants in the landscape. Through lectures, assignments, and fieldwork, the course provides class participants with an appreciation of the importance of vertical vegetation as a design element. Students will be introduced to a variety of built projects and plants commonly used in Bay Area landscapes.

Landscape Plants: Identification and Use: Read More [a+]

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 6 hours of fieldwork per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Landscape Plants: Identification and Use: Read Less [-]

LD ARCH 119 Flood Risk Management 3 Units

Terms offered: Spring 2024, Spring 2023

This course explains fundamental concepts in flood risk management, summarizes the history of flood management in California, the US, and globally, and tracks the development of state-of-the-art approaches to assessing flood risk, equity implications, and utilizing nature-based solutions to sustainably manage floods. The course is offered at both the upper-division undergraduate (LA119) and graduate (LA229) levels. Lectures are the same for both undergrad and grad courses, but there are separate discussion sections and requirements.

Flood Risk Management: Read More [a+]

Objectives & Outcomes

Course Objectives: The objective of the course is to provide students with an understanding of the physical processes giving rise to floods, and also the social and institutional response to flood risk.

Student Learning Outcomes: Students will learn the fundamental hydrologic processes behind flooding, the models commonly employed to assess the extent of flood hazard, the limitations of extrapolating short hydrologic records to estimate long-return period floods such as the 100-year flood, limitations of structural measures to control flood hazard, and increase in flood hazard arising from climate change.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Kondolf

Flood Risk Management: Read Less [-]

LD ARCH 120 Topographic Form and Design Technology 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

Technical, graphic and computational exercises, and studio problems in topographic site design and the shaping of the site for surface drainage.

Topographic Form and Design Technology: [Read More](#) [+]

Rules & Requirements

Prerequisites: 102 or consent of instructor

Hours & Format

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

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

Instructor: Jewell

Topographic Form and Design Technology: [Read Less](#) [-]

LD ARCH 121 Design in Detail: Introduction to Landscape Materials and Construction 4 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

This course introduces the visual and physical characteristics of landscape construction materials including, but not limited to, stone, brick, concrete, metal, asphalt, and wood. Additionally, lectures cover the production and availability of these materials, any existing evaluations on their sustainability, and their potential impact on the immediate environment. Students also learn to utilize standard sources of information on building materials and the terminology typically utilized when choosing and specifying construction materials. They become familiar with dimensional standards for landscape structures, including pavements, stairs, furnishings, retaining walls, freestanding walls, fences, decks, and small overhead structures.

Design in Detail: Introduction to Landscape Materials and Construction: [Read More](#) [+]

Rules & Requirements

Prerequisites: 101, Architecture 100A, or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1.5 hours of laboratory per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Design in Detail: Introduction to Landscape Materials and Construction: [Read Less](#) [-]

LD ARCH 122 Hydrology for Planners 4 Units

Terms offered: Spring 2022, Spring 2019, Spring 2018

This course presents an overview of relevant hydrologic, hydraulic, and geomorphic processes, to provide the planner and ecologist with insight to incorporate these processes into the planning process and coordinate with specialists in the field of hydrology. Relevant government regulations and policies are also reviewed. The course is not intended to duplicate more specialized courses offered in such fields as engineering hydrology, coastal engineering, or geology, but rather to provide an integrated understanding. The course takes a process- and field-based approach to hydrology, and emphasizes interdisciplinary perspectives.

Hydrology for Planners: [Read More](#) [+]

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Alternate method of final assessment during regularly scheduled final exam group (e.g., presentation, final project, etc.).

Instructor: Kondolf

Hydrology for Planners: [Read Less](#) [-]

LD ARCH 130 Sustainable Landscapes and Cities 4 Units

Terms offered: Spring 2024, Summer 2023 8 Week Session, Spring 2023

This course is an introduction to issues of sustainability in the designed landscape and in our cities. It includes environmental history as well as contemporary social, environmental and political issues surrounding sustainable design and activism. The course stresses motives and values expressed through environmental design at various scales – from neighborhood to global and examines problems affecting healthy environments and their solutions. Students study the need for protection and restoration of healthy ecological systems within the design of cities and landscapes and discuss ways to enable these systems to thrive. Readings and discussions focus on means to evaluate, create and advocate for healthy, sustainable environments.

Sustainable Landscapes and Cities: [Read More](#) [+]

Objectives & Outcomes

Course Objectives: This course is an important elective to majors in the College of Natural Resources and CED students who have Architecture and City Planning majors. A new CED major, Sustainable Environmental Design (SED), has increased the number of students who require this class. It also fulfills the Social and Behavioral breadth requirement. Therefore, it is clear that the course enrollment should be increased to accommodate students from both inside and outside the CED.

This course offers students the opportunity to examine a specific range of sustainable design interventions that attempt to address primary problems related to climate change, the need for healthy watersheds, adequate food security and socially resilient communities in the face of rapid environmental change. Students will see the complexity of various aspects and approaches required of sustainable design and occasionally competing goals of a project.

Student Learning Outcomes: On the required field trip to San Francisco, students will be able to see and critique the efficacy of policy; of existing and emerging landscape design technology; to observe interventions intended to assist existing natural systems in urban environments and promote their viability; to see the value of community building to help establish resilient neighborhoods; to become verbally articulate about these issues.

Students will learn about and discuss the inter-connectedness of natural systems overlapped by human habitation. They will learn about design that can facilitate positive social systems and how the combination of ecological and social communities can present answers to some of the pressing environmental problems we face. Students will learn how various design strategies involve land preservation, watershed protection and restoration; local food production networks; resilient neighborhood design through community participation in open space design; pedestrian and bicycle friendly streets, urban forestry; reducing the waste stream.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Summer: 8 weeks - 6 hours of lecture and 2 hours of discussion per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: McRae

Sustainable Landscapes and Cities: [Read Less](#) [-]

LD ARCH 133 Drawn from the Field 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

This course will provide students an opportunity to analyze and interpret the iconic built landscapes of the Bay Area through direct observation and field sketching. The vision for the course is influenced by the global popularity of the Urban Sketchers movement, a phenomenon based on personal engagement with one's environment. The annotated sketchbook will be used as the primary tool for investigation and documentation of core fundamental principles and elements of landscape and urban design. Lectures and hands-on demonstrations will give students the tools to respond to and construct meaning from their on-site observations.

Drawn from the Field: [Read More](#) [+]

Hours & Format

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

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructor: Sullivan

Drawn from the Field: [Read Less](#) [-]

LD ARCH 134A Drawing Workshop 1 3 Units

Terms offered: Fall 2018, Fall 2017, Fall 2016

This studio will elaborate on a number of studio themes while introducing the students to a variety of graphic mediums and drawing techniques. Measured drawing procedures (including orthographic projections) will be augmented by figure-ground principles and themes of contrast, color, chiaroscuro, and compositions. On-site and visits to galleries and museums will complement the studio sessions.

Drawing Workshop 1: [Read More](#) [+]

Rules & Requirements

Prerequisites: Environmental Design 11A-11B or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 3 hours of studio per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

Instructor: Hood

Drawing Workshop 1: [Read Less](#) [-]

LD ARCH 134B Drawing Workshop II 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

This course introduces students to digital tools relevant to the discipline of landscape architecture. The course encompasses a series of lectures, lab exercises and projects designed to equip students with a foundational and expandable computing skill set relevant to the education and practice of landscape architecture. In addition to establishing technical competency, the course emphasizes establishing creative workflows between software applications.

Drawing Workshop II: Read More [\[+\]](#)

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of lecture and 3 hours of laboratory per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructor: Kullmann

Drawing Workshop II: Read Less [\[-\]](#)

LD ARCH 135 Sacred Landscapes 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

This course is a laboratory for invention and visual perception. A designed landscape has the potential to induce a powerful emotional experience. The premise of this course is based on the idea that highly valued places are works of art, as well as places of enlightenment and transformation. This class will explore ideas of 'sacredness' in the landscape through a series of design explorations and a summation project. Our journey of discovery aspires to provide future landscape architects with a new and unique perspective to help them recognize and generate Sacred Landscapes.

Sacred Landscapes: Read More [\[+\]](#)

Rules & Requirements

Prerequisites: LD ARCH 134A, LD ARCH 201 or consent of Instructor

Hours & Format

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

Summer: 8 weeks - 2 hours of lecture and 4 hours of studio per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructor: Sullivan

Sacred Landscapes: Read Less [\[-\]](#)

LD ARCH 140 Social and Psychological Factors in Open Space Design 3 Units

Terms offered: Spring 2024, Spring 2023, Fall 2021

User-oriented approach to design. Post-occupancy evaluation as a tool for understanding use of designed open spaces. Design as a communication process. Environmental needs of vulnerable populations-- children, elderly, disabled, low-income families. Personal and societal environmental values.

Social and Psychological Factors in Open Space Design: Read More [\[+\]](#)

Hours & Format

Fall and/or spring: 15 weeks - 1.5 hours of lecture and 1.5 hours of discussion per week

Summer: 8 weeks - 3 hours of lecture and 3 hours of discussion per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Social and Psychological Factors in Open Space Design: Read Less [\[-\]](#)

LD ARCH 154 Special Topics in Landscape Architecture and Environmental Planning 1 - 3 Units

Terms offered: Fall 2022, Fall 2021, Fall 2020

Designed to be a forum for presentation of student research, discussions with faculty researchers and practitioners, and examination of topical issues in landscape architecture and environmental planning. Topics will be announced at the beginning of each semester.

Special Topics in Landscape Architecture and Environmental Planning: Read More [\[+\]](#)

Rules & Requirements

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

Hours & Format

Fall and/or spring: 15 weeks - 1-3 hours of seminar per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Special Topics in Landscape Architecture and Environmental Planning: Read Less [\[-\]](#)

LD ARCH 160 Professional Practice Seminar 2 or 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

This course provides instruction and guidance in the professional practice aspect of landscape architecture in the United States. Covering the breadth of the profession, we will learn the professional duties of a landscape architect, and the process of completing a real-life landscape architectural project. The goal of this class will be to learn what it means to be a practicing, licensed landscape architect, with the understanding that this is ultimately a construction based, service-oriented industry.

Professional Practice Seminar: [Read More](#) [+]

Hours & Format

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

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Professional Practice Seminar: [Read Less](#) [-]

LD ARCH 170 History and Literature of Landscape Architecture 3 Units

Terms offered: Spring 2024, Spring 2023, Spring 2022

This course surveys the history of landscape architecture in four realms: 1) gardens; 2) urban open space, that is, plazas, parks, and recreation systems; 3) urban and suburban design; and 4) regional and environmental planning. The course will review the cultural and social contexts which have shaped and informed landscape architecture practice and aesthetics, as well as the environmental concerns, horticultural practices, and technological innovations of historic landscapes.

History and Literature of Landscape Architecture: [Read More](#) [+]

Hours & Format

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

Summer: 8 weeks - 6 hours of lecture per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Mozingo

History and Literature of Landscape Architecture: [Read Less](#) [-]

LD ARCH C171 The American Designed Landscape Since 1850 3 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

This course surveys the history of American landscape architecture since 1850 in four realms: 1) urban open spaces--that is squares, plazas, parks, and recreation systems; 2) urban and suburban design; 3) regional and environmental planning; 4) gardens. The course will review the cultural and social contexts which have shaped and informed landscape architecture in the United States since the advent of the public parks movement, as well as, the aesthetic precepts, environmental concerns, horticultural practices, and technological innovations of American landscapes. Students will complete a midterm, final, and a research assignment.

The American Designed Landscape Since 1850: [Read More](#) [+]

Hours & Format

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

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Mozingo

Also listed as: AMERSTD C171

The American Designed Landscape Since 1850: [Read Less](#) [-]

LD ARCH C177 GIS and Environmental Spatial Data Analysis 4 Units

Terms offered: Spring 2017, Spring 2016, Spring 2015

This course offers an introduction to spatial data analysis. It integrates ArcGIS analysis with spatial statistical analysis for the study of pattern and process applicable to a wide variety of fields. Major topics covered include: spatial sampling, processing data with ARC Info, exploratory GIS analysis, spatial decomposition, spatial point patterns and Ripley's K function, spatial autocorrelation, geostatistics, spatially weighted regression, spatial autoregression, generalized linear models and generalized linear mixed models.

GIS and Environmental Spatial Data Analysis: Read More [+]

Rules & Requirements

Prerequisites: Requirements are course in GIS and a course in probability and statistics. We invite participation of undergraduates and graduate students from: ESPM, Landscape Architecture & Environmental Planning, City and Regional Planning, IB, Civil Engineering, Energy and Resources Group, Public Health, Earth and Planetary Science, and other campus departments or units with students interested in learning and using spatial analysis for the environment- both natural and built

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 3 hours of laboratory per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructors: Biging, Radke

Also listed as: ESPM C177

GIS and Environmental Spatial Data Analysis: Read Less [-]

LD ARCH 187 Representation as Research: Contemporary Topics in Landscape Visualization 3 Units

Terms offered: Prior to 2007

Representations typically demonstrate two different forms of landscape analysis—empirical data and personal perception/aesthetics—but landscape provides opportunities for their overlaps in order to advance and synthesize robust research. Through lectures, technical tutorials, and reading discussions, this course will profile contemporary landscape research practices and representational techniques. We will use visualization to advance landscape research, theory, and site analysis, focusing specifically on methods that tackle issues of temporality and ephemerality. We will generate original media that communicates spatial, ecological, and cultural complexities.

Representation as Research: Contemporary Topics in Landscape Visualization: Read More [+]

Rules & Requirements

Prerequisites: Working knowledge of Rhino, AutoCAD, Adobe Creative Suite (Illustrator, Photoshop, InDesign)

Hours & Format

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

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructor: Cooper

Formerly known as: Landscape Architecture 189

Representation as Research: Contemporary Topics in Landscape Visualization: Read Less [-]

LD ARCH C188 Geographic Information Science 4 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022

This course introduces the student to the rapidly expanding field of Geographic Information Systems (GIS). It addresses both theory and application and provides the student with a dynamic analytical framework within which temporal and spatial data and information is gathered, integrated, interpreted, and manipulated. It emphasizes a conceptual appreciation of GIS and offers an opportunity to apply some of those concepts to contemporary geographical and planning issues.

Geographic Information Science: Read More [a]

Rules & Requirements

Prerequisites: Some computer experience

Hours & Format

Fall and/or spring: 15 weeks - 3-3 hours of lecture and 1-2 hours of laboratory per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Kim

Also listed as: GEOG C188

Geographic Information Science: Read Less [-]

LD ARCH 197 Field Study in Landscape Architecture 2 - 3 Units

Terms offered: Spring 2019, Fall 2016, Fall 2015

See departmental information sheet for limitations. Supervised experience relative to specific aspects of landscape architecture. Regular individual meetings with faculty and outside sponsor. Reports required.

Field Study in Landscape Architecture: Read More [a]

Rules & Requirements

Prerequisites: Upper division standing and consent of instructor and sponsor

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

Hours & Format

Fall and/or spring: 15 weeks - 2-3 hours of fieldwork per week

Summer:

6 weeks - 5-7.5 hours of fieldwork per week

8 weeks - 3.5-5.5 hours of fieldwork per week

10 weeks - 3-4.5 hours of fieldwork per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

Field Study in Landscape Architecture: Read Less [-]

LD ARCH 198 Directed Group Study 1 - 4 Units

Terms offered: Spring 2021, Spring 2020, Fall 2019

Enrollment restrictions apply.

Directed Group Study: Read More [a]

Rules & Requirements

Prerequisites: Consent of instructor

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

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of directed group study per week

Summer:

6 weeks - 2.5-10 hours of directed group study per week

8 weeks - 1.5-7.5 hours of directed group study per week

10 weeks - 1.5-6 hours of directed group study per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

Directed Group Study: Read Less [-]

LD ARCH 199 Supervised Independent Study and Research 1 - 4 Units

Terms offered: Spring 2016, Fall 2015, Spring 2013

Enrollment restrictions apply.

Supervised Independent Study and Research: Read More [a]

Rules & Requirements

Prerequisites: Consent of instructor

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

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of independent study per week

Summer:

6 weeks - 2.5-10 hours of independent study per week

8 weeks - 1.5-7.5 hours of independent study per week

10 weeks - 1.5-6 hours of independent study per week

Additional Details

Subject/Course Level: Landscape Architecture/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

Supervised Independent Study and Research: Read Less [-]