



**Course Title:** Photographing Nature: Using a Camera to Study the Natural World

**Course Code:** SCI 06

**Instructor:** Robert Siegel

**Grade Options:**

- Letter Grade (A, B, C, D, No Pass) - requirements are listed below
- Credit/No Credit (CR/NC)
  - A passing grade (for "Credit") = at least 70% of expectations accomplished
- No Grade Requested (NGR)
  - This is the default option. No work will be required; no credit shall be received; no proof of attendance can be provided.

*\*Please Note: If you require proof that you completed a Continuing Studies course for any reason (for example, employer reimbursement), you must choose either the Letter Grade or Credit/No Credit option. Courses taken for NGR will not appear on official transcripts or grade reports.*

## A NOTE FROM THE INSTRUCTOR

Photography is playing an ever expanding role in our lives. This is the first time in history when virtually every person carries a photographic imaging device with them almost 100% of the time, usually in the form of a phone, but also in the form of convenient point and shoot cameras, and even versatile DSLRs. We might think of this as “the democratization of photography”.

In addition to studying photography because it is inherently interesting, we will use photography as a lens for looking at nature. The idea behind the course is to get students to rethink the environment in which they live through the medium of pictures. The rationale is that photography causes people to slow down, scrutinize, and record what they see, as well as what they think they see - since the camera can capture things that are too fast, too slow, too far, too small, or too complicated for the brain to process during a routine encounter. This is taken to an extreme in astronomical photography or electron microscopy.

Students will use their cameras to visually record their observations in the field. The pictures will then form the basis of mini-research projects on the chosen subjects to greatly expand their knowledge beyond what they could observe in a brief moment in time. We will emphasize the integration of pictorial and verbal descriptions, as well as personal observation with collected knowledge.

Emphasis will be placed on 1) gaining familiarity with the local environment, 2) effective visual expression, 3) scientific understanding of the chosen topics 4) integration of visual and verbal

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description in communicating science, and 5) photographic technique. This class will cover a fair bit of science but no prerequisites or prior knowledge of biological processes is required.

This offering might be described as a course on “the photography of science” as opposed to say the science of photography or the art of photography, although these other elements will come into play as well.

The course is intended to be interesting, educational, useful, and fun. This will work best if each student contributes to the structure of the course and tries to function as a self-motivated scholar.

## **FORMAT**

Two sections of the course are being taught: one as a Stanford Undergraduate Introductory Seminar (IntroSem) and one as a Continuing Studies Program (CSP) course. Each section of the class will meet twice per week: one didactic session and one field trip.

The didactic session will be divided into presentations by the instructor, presentations by guest speakers, student presentations, and picture review. The IntroSem didactic session will be on Tuesday afternoons and the CSP section is on Wednesday evenings.

The field session will take place on Saturdays and will combine the two sections of the class. (See separate Field Trip section for additional info.)

## **PREREQUISITES**

The prerequisites for the course are 1) an interest in the topic, 2) a willingness to cover and learn the environmental underpinnings in this area of study and 3) flexibility in terms of scheduling. There are no prior course prerequisites.

## **CLASS SIZE AND SELECTION OF STUDENTS**

The class is limited to 18 students. Ideally, the selection of students is based on their level of commitment, lack of scheduling conflicts, flexibility, extent to which the course would integrate with other interests, writing eloquence, and availability of pertinent camera equipment.

## **EQUIPMENT**

The course will deal with digital photography. A DSLR is preferable but not required. DSLR have the advantage of being extremely versatile with a wide range of settings. They have the disadvantage of size, weight, cost, and complexity. The so-called ‘megazoom cameras’ are

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an excellent compromise. Pocket point and shoot cameras and phone cameras also exhibit a series of advantages and disadvantages but they may lack flexibility in approaching certain types of nature photography.

## GRADING PHILOSOPHY

Students are expected to be self-motivated and produce high quality work with emphasis on academic scholarship. A great deal of credit will be given to those students who show independent initiative.

## COURSE REQUIREMENTS

### Student Requirements

- 1) Mandatory class attendance and participation
- 2) Selection and presentation of 5 images per week – 10%
- 3) Course blog / presentation write up (1 per week) – 10 %
- 4) Blog commentary (2 per week) – 10%
- 5) Observations / Twitter – (2 per week) – 10%
- 6) PowerPoint presentations (1 per week) – 50%
- 7) Photo exhibit – 10%
- 8) Dossier – required to receive a letter grade

## COURSE TOPICS, THEMES, SKILLS, LANGUAGE METAPHORS AND VENUES

Each week we will explore a series of **topics, nature themes, techniques/skills, language metaphors, and locations**. These appear as a series of lists below, although the emphasis may change somewhat during the quarter. These will also serve as the basis for students' weekly assignment.

Please let me know of any additional items that you wish to have covered.

### Topics (Wednesdays)

Intro – photographing nature  
Rethinking photography  
iNaturalist  
Dissecting the picture  
The light room  
Macro  
Creativity  
Research – the camera as a tool in science  
Equipment - What's in your bag? / care and feeding  
Presentations / exhibition

### Nature themes (subject)

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plants  
inverts  
birds  
climate, weather, seasons  
vertebrates  
mushrooms  
sun and moon - environment  
flowers  
fungi  
landscape, earth  
people as nature  
water

### **Skills / techniques**

Camera settings  
Perspectives  
Post-image processing  
Observations  
Lighting  
Depth of field  
Macro  
Color  
Contrasts  
Movement  
Change / interaction  
Dissection and set up (alteration)  
Photo sharing

### **Language Metaphors**

Composition  
Syntax  
Grammar  
Vocabulary  
Style/voice  
Creativity  
Quick communication – Twitter  
Email  
Blog  
Facebook  
Diary/memory book/scrap book  
Drafts  
Op-Ed  
The photo essay

## Venues - Saturdays

The Stanford Dish  
The Arizona Cactus Garden  
Jasper Ridge Biological Preserve  
Año Nuevo State Park  
Palo Alto Baylands / Duck Pond / Byxbee Park  
Arastradero Preserve  
Pescadero or other beach site  
San Bruno Mountain  
Tilden Botanical Garden  
Felt lake  
The Stanford Quad  
Santa Cruz Arboretum  
Backyard photography

## COURSE FIELD TRIPS

Each week, students will be expected to get out in the field to take a series of pictures corresponding to the weekly assignments. Many of these outings will be carried out as a group to selected locations that are particular suitable for photographing aspects of nature.

As noted above, field trips will combine two sections of the class: Stanford Undergraduate Introductory Seminar students and Continuing Studies Program students. The two groups will meet on campus and carpool together. We will be joined in the field by a various expert photographers and others who may be consulted for advice on technical, scientific, and/or artistic issues.

Potential field trip locations are listed above. A tentative schedule will be posted online and announced in class. I will also accept suggestions for optional field trips. The actual destinations will depend on the availability of transportation and other variables, most notably weather. Depending on the weather and the venue the times and dates may change. Flexibility is one of the course requirements.

Please let me know if you have a car and would be willing to drive. We will meet in the Tresidder parking lot unless otherwise specified. The time is determined by the venue and the weather. Times will be decided/announced in class.