

**PHS 275 Photography and Photometry, Spr/10**  
**Office hours: T,Th: 10 - 11:15, 3:45 - 4:15**  
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### **COURSE DESCRIPTION:**

PHS 275 explores those scientific principles of physics which relate to photography. These include the basic properties of light and light meters; ray optics, including reflection, refraction and dispersion; photographic films and the electromagnetic spectrum; light polarization and the use of polarizing filters; lens optics and the use of pinhole cameras; and the relationship of color film to light sources of various color temperatures.

In addition to technical and scientific concepts, students will learn and discuss the aesthetics of photography during ongoing group critiques of student work. Principles of composition, framing, choice of viewpoint, and use of light and shadow will be discussed. The concepts of abstraction and representation will also be introduced.

There are no prerequisites. A compact digital camera or digital SLR camera is required. This course fulfills the core requirement for natural science.

### **COURSE REQUIREMENTS:**

**1. Attendance** is required. Students more than 15 mins. late for class will be considered absent. More than two unexcused absences will result in a lowering of the final grade. More than 5 unexcused absences will result in a 0 for the class participation and attendance part of the final grade. If you are sick and want the absence excused, I will need a doctor's note. Consistent lateness or leaving class early will also adversely affect your grade.

**2. Class participation** is considered an important part of the course and is strongly encouraged.

**3. Shooting assignments** are usually due every two weeks.

- failure to complete an assignment on time will result in a lowering of the grade for that assignment, specifically, one letter grade per week.

- assignments not completed at beginning of class cannot be accepted

- any assignment handed in more than 3 weeks late will receive a 0.

- incomplete assignments, (i.e., insufficient prints, contact prints), cannot be accepted.

- assignments are graded on the basis of technical execution, fulfillment of the specific assignment, and creativity of approach

- **Note:** if you are absent the day an assignment is given and want to see the demo visuals for that assignment, you can log on and **locate your Shared Redwood folder; then go to Course Info > Moore folder > PHS 275 > Assg 1 (or any other assignment)**

**4. Resubmit policy:** If you want to improve their grade on a given assignment:

- you may re shoot and/or re print that assignment, (in part or in full) and resubmit it at any time up to the last day of class.

- late assignments (or late contact prints) cannot be resubmitted

- you can resubmit a maximum of 2 assignments

- you cannot resubmit the same assignment more than once

- please hand in all the old prints, the contact prints, and new prints when resubmitting

- label which prints are resubmits, with an 'R' on the back

**5. Quiz, midterm exam, and final exam:** There will be a quiz given early in the semester and a midterm exam about halfway through. There will also be a final exam at the end of the semester. There will be no make up tests, expect for serious personal illness.

#### **COURSE EVALUATION:**

Class participation and attendance	15%
Shooting assignments	50%
Quiz	5%
Midterm Exam	15%
Final Exam	15%

#### **SPECIAL NEEDS:**

In coordination with the Academic Support Center, reasonable accommodations are provided for qualified students with disabilities. Please register at the ASC office for disability verification. After receiving your accommodation form from the ASC, you will need to make an appointment with me to review the form and discuss your needs. This should be done within the first week of class.

#### **REQUIRED SUPPLIES:**

1. a compact digital camera, bridge digital camera or digital SLR camera

- Note: if you have an **ultra** compact camera, one with few options, I strongly encourage you to upgrade to one with more options

- you will be signing out a school digital SLR for at least one assignment

2. USB flash drive – to transport your image files to and from the school computers
  - some brands are incompatible with school PC's; all brands work with Macs
  - Kingston works with all computers; Sandisk are often problematic
  - CDR's are another option, though less flexible
  
- if you have a flash drive or camera card reader that is incompatible w/ school PC's, you can use a Mac in SC210 or burn your photos on to a CD to bring to the lab
  
3. darkroom photography paper – you will receive necessary paper for 2 assignments
  
4. inkjet photo paper – you will receive a 50 sheet box of HP Advanced photo paper - cost is \$18.
  - you are required to use this paper with the school printers because you will get a strong color cast if you use any other paper
  - this is your only expense beyond your lab fee
  - your lab fee pays for ink (which is very expensive)

### **CLASS SCHEDULE:**

#### Week 1:

- T 1/19      Introduction: course requirements, syllabus  
 Lecture: camera types, overview of camera controls  
**Bring cameras to class on Thurs.** and until further notice  
Homework: look over your cameras and manuals
- Th 1/21      Assg 1 given: Framing and Viewpoint– due 2/4  
 Lecture: CDC camera controls, camera care  
 see students with camera issues

#### Week 2:

- T 1/26      Discuss progress on Assg. 1  
 Lecture: review camera controls  
 Intro to digital lab  
 Demo: uploading files in Photoshop, flash drive to shared redwood  
 Basic editing in Photoshop: tonal adjustments, retouching, cropping
- Th 1/28      Digital lab policies and procedures  
 Lecture: digital camera types  
 Digital lab demo: printing, contact printing in Photoshop  
 students try basic editing and printing

Week 3:

T 2/2 Demo: using Macs in SC210; students work on Macs  
Lecture: light fundamentals, review and complete previous lecture material

Th 2/4 **Assg 1 due** – group critique

Week 4:

T 2/9 Assg 2 given: Ray Optics and Quality of Light – due 2/18  
Lecture: review light fundamentals; intro to ray optics

Th 2/11 Lecture-demo: ray optics  
Lecture: flash modes; exposure controls; alternative shooting modes; light meters  
Announce and review: quiz on Tuesday

Week 5:

T 2/16 Complete and review previous lecture  
Photoshop demo: selections  
**quiz on material covered so far**

Th 2/18 **Assg 2 due** – group critique

Week 6:

T 2/23 Assg 3 given: Color temperature and light sources: – due 3/4  
Lecture: color  
Quizzes returned and reviewed

Th 2/25 Review color lecture material  
Lecture: refraction, dispersion

Week 7:

T 3/2 Lecture: review Thurs material; image resolution  
lecture: CDC lenses

Th 3/4 **Assg 3 due** – group critique  
figure lab schedule w/ pinhole printing

3/8 - 3/12 **SPRING BREAK**

Week 8:

T 3/16 Lecture-demo: review image resolution; intro to lens optics and refraction  
Assg 4 given: Pinhole cameras and lens optics – due 3/30

Th 3/18 Complete lecture: lens optics  
Sign out all pinhole cams  
Class shoot – pinhole cameras; darkroom demo

Week 9:

T 3/23 Review for midterm exam  
Finish lecture: lens optics

Th 3/25 **Midterm exam**  
Demo: scanning and printing pinholes

Week 10:

T 3/30 **Assg 4 due** – group critique

Th 4/1 NO CLASS - EASTER BREAK

Week 11:

T 4/6 Assg 5 given: Infra red photography, light polarization - due 4/15  
Lecture: Electromagnetic spectrum and light polarization  
Demo: use of DSLR cameras

Th 4/8 Review Assg 5; assign in class work on 4/13??  
Complete demo: use of DSLR's  
Class shoot – using polarizing filters and DSLR's

Week 12:

T 4/13 Review and complete lecture: light polarization  
Demo: simulating infra red in Photoshop  
possibly in class lab work on Assg 5

Week 13:

Th 4/15 **Assg 5 due** – group critique  
Students bring objects for photograms on 4/20

Week 13:

T 4/20 Assg 6 given: Photograms; due 4/27  
Demo in darkroom + students make photograms

Th 4/22 Complete all lecture material  
Teacher evaluations given

Week 14:

T 4/27 **Assg 6 due** – group critique  
**All signed out equipment due**

Th 4/29 Review for final exam

Exam week: Final exam given  
Resubmits and assignment 6 prints returned