

**DC 274 IMAGE, OPTICS & CINEMATIC MOTION  
SUMMER I 2016**

**Lecture Location: CDM 202**

**Day/Time: Tue and Thu 5:45 - 9:00 PM**

**Lab Location: CDM 658**

**Day/Time: Wed, 6:00 - 8:00 PM**

**INSTRUCTOR: Gary Novak**

**Office Hours: Tue/Thu 4:45 -5:30 pm  
and by appointment**

**Office: CDM 405**

**E-mail: [gnovak@cim.depaul.edu](mailto:gnovak@cim.depaul.edu)**

**Lab TA: Kaitlin Creadon**

**E-mail: [kaitlin.creadon@gmail.com](mailto:kaitlin.creadon@gmail.com)**

**COURSE DESCRIPTION:**

Cinematography is the scientifically grounded discipline of making lighting and camera choices in order to record moving images. This course deals with the basic mathematics, physics, and photochemistry that underlies cinematography and that motivate camera design and construction. A student who masters the foundations of cinematography through a mixture of lectures, readings, exercises, and labs will be able to evaluate understand how motion based recording choices affect perception of moving images they see everyday. PREREQUISITES: None

**COURSE OBJECTIVES:**

- To control the depiction of three-dimensional space on a 2D surface through the use of optics
- To understand the nature of light and film/video latitude
- To control exposure
- To determine a visual “look” and achieve it through photochemical and/or digital means
- To understand how the relationship of resolution, frame rate, shutter speed and camera movement influence the viewer

**LEARNING DOMAIN DESCRIPTION:**

DC 274 – Image, Optics, and Cinematic Motion is included in the Liberal Studies program as a course with credit in the Scientific Inquiry domain. Courses in the Scientific Inquiry domain are designed to provide students with an opportunity to learn the methods of modern science and its impact on the world around us. Courses are designed to help students develop a more complete perspective about science and the scientific process, including: an understanding of the major principles guiding modern scientific thought; a comprehension of the varying approaches and aspects of science; an appreciation of the connection among the sciences; the fundamental role of mathematics in practicing science; an awareness of the roles and limitations of theories and models in interpreting, understanding, and predicting natural phenomena; and a realization of how these theories and models change or are supplanted as our knowledge increases.

**GOALS & LEARNING OUTCOMES:**

Below are listed the learning goals and outcomes for the Science Inquiry Domain. Each goal is listed followed by learning outcomes associated with the goal. Most of this document conforms to the National Science Education Standards.

1. Students will understand the major principles guiding modern scientific thought. Students will demonstrate a mastery of the science content knowledge of their SID courses.
2. Students will know that science, technology, and math serve as mechanisms for inquiry into the nature of the universe. Students will:
  - a. Identify questions that can be answered through scientific investigations
  - b. Design and conduct a scientific investigation to test a scientific hypothesis
  - c. Use appropriate tools and techniques to gather, analyze, and interpret data to support or refute a scientific hypothesis
  - d. Develop descriptions, explanations, predictions, and models using evidence

- e. Describe relationships between evidence and explanations using critical and logical thinking
  - f. Recognize and analyze alternative explanations and predictions
  - g. Communicate scientific procedures and explanations
  - h. Use mathematics in all aspects of scientific inquiry
3. Students will understand and appreciate the interrelationships among science, technology and math. Students will:
- a. Use technology and mathematics to identify a problem or design a solution to a problem
  - b. Give examples of how science and technology inform and influence each other
4. Students will understand and appreciate the role of science in society and in their lives. Students will:
- a. Provide examples of how science and technology impact our lives, and how social needs and concerns impact our development of technology and scientific investigation
  - b. Develop positive attitudes towards science, technology, and mathematics
  - c. Establish an ongoing experiential/service-learning interest in science, technology, and mathematics
5. Students will understand the nature of science, technology, and mathematics. Students will:
- a. Provide examples of the abuse of science, including the representation of un-falsifiable claims as science and other forms of pseudoscience
  - b. Explain the strengths and limits of scientific inquiry
  - c. Explain the difference between evidence and inference, and the provisional nature of scientific explanations by providing examples of how our understanding of the workings of the world has changed in the past
  - d. Explain the difference between probability and certainty, and describe what is meant by uncertainty in the context of science, technology, and mathematics

#### **HOW LEARNING OURCOMES WILL BE MET:**

Through a mixture of Lectures and Lab work combined with quizzes on lectures and reading material and also the final exam.

#### **WRITING EXPECTATIONS:**

Writing is integral for communicating ideas and progress in science, mathematics and technology. The form of writing in these disciplines is different from most other fields and includes, for example, mathematical equations, computer code, figures and graphs, lab reports and journals. Courses in the SI domain must include a writing component where that component takes on the form appropriate for that course (i.e., *lab reports, technical reports, etc.*)

#### **HOW WRITING EXPECTATIONS WILL BE MET:**

Each Lab will have a lab report where students will document their findings. Also, several take home quizzes will be given throughout the quarter. The quizzes are written essays based on materials covered in class and the at home readings.

#### **REQUIRED TEXT & SOFTWARE:**

Handouts as supplied by instructor  
Software will be provided as needed in the Lab  
Course Management System – D2L (<https://d2l.depaul.edu>)

## **COURSE POLICIES:**

In addition to DePaul University course policies (see student handbook), the following special policies will apply to this course.

### **-Attendance:**

Each week's class consists of lectures and screenings; attendance is mandatory. For the purposes of this class an absence is defined as not showing up for class or showing up 15 minutes, or more, late for a class. All absences will result in a reduction of the attendance/participation grade.

### **-Assignments:**

Reasonable deadlines are given for completion for each assignment. Consequently late assignments will not be accepted without prior consent of the instructor.

### **-Plagiarism:**

Plagiarism on assignments or cheating on tests are serious offenses and earn the student a failing grade for the class. There are no exceptions to this rule. If you are in doubt about the definitions of plagiarism, consult your student handbook.

### **-Course Lectures/Reading Assignments:**

Lecture presentations will occur weekly. The textbooks offer an opportunity for independent learning that supplements the lecture presentations. The instructor will use both the classroom and the textbooks. Lectures may introduce additional material not available in the readings, and the readings may explore concepts not mentioned in class. BOTH SOURCES ARE NEEDED.

### **-Examinations:**

Students who do not take exams during the regularly scheduled time will receive a failing grade for the exam unless they have contacted the instructor in advance to arrange for a make-up exam. Make-up exams will be administered by the College according to its make-up exam schedule.

### **-Content Changes:**

Depending on time factors, the assignments projected for the term may require slight alteration or rescheduling.

### **-Sexual Harassment:**

The policy as specified in the student handbook will be adhered to in this class.

### **-Attitude:**

A professional and academic attitude is expected throughout this course. Measurable examples of non-academic or unprofessional attitude include but are not limited to: talking to others when the instructor is speaking, mocking another's opinion, cell phones ringing, emailing, texting or using the internet whether on a phone or computer. If any issues arise a student may be asked to leave the classroom. The professor will work with the Dean of Students Office to navigate such student issues.

### **-Civil Discourse:**

DePaul University is a community that thrives on open discourse that challenges students, both intellectually and personally, to be Socially Responsible Leaders. It is the expectation that all dialogue in this course is civil and respectful of the dignity of each student. Any instances of disrespect or hostility can jeopardize a student's ability to be successful in the course. The professor will partner with the Dean of Students Office to assist in managing such issues.

### **-Cell Phones/On Call:**

If you bring a cell phone to class, it must be off or set to a silent mode. Should you need to answer a call during class, students must leave the room in an unobtrusive manner. Out of respect to fellow students and

the professor, texting is never allowable in class. If you are required to be on call as part of your job, please advise me at the start of the course.

### **GRADING:**

Participation	10%
Reading quizzes	20% (Quiz 1 due Class 5, Quiz 2 due Class 7, Quiz 3 due Class 9)
Assignments & Labs	35%
Final Exam	35% (Week 10 in the Lecture Classroom)

A = 100-93, A- = 92-90, B+ = 89-88, B = 87-83, B- = 82-80, C+ = 79-78, C = 77-73, C- = 72-70, D+ = 69-68, D = 67-63, D- = 62-60, F = 59-0. A indicates excellence, B indicates good work, C indicates satisfactory work, D work is unsatisfactory in some respect, F is substantially unsatisfactory work.

All grading is final (assignments may not be resubmitted for new grades).

All assignments are due the date they are assigned. Late assignments will be penalized 10% per week late. If an assignment is more than two weeks late, it is worth a maximum of 50% of its original point value. If you anticipate you will miss class, the assignment must be submitted the day it is due, unless the absence for the class is excused (documented illness, death in the family, etc.).

Labs are due one week after they are assigned. If you miss a lab you must make it up on your time. Equipment is supplied during lab times for appropriate labs. You have the option to make up a single lab by writing a three page paper about the subject the lab covered. Must be arranged with your instructor.

## **COURSE OUTLINE**

### **WEEK ONE**

**Lecture - A BRIEF HISTORY OF CINEMATOGRAPHY**  
**Lab – Intro to Lab, Procedures, and Animation Lab**  
**Lecture – VISUAL PSYCHOLOGY**

### **WEEK TWO**

**Lecture – EXPOSURE: THE EXPOSURE TRIAD**  
**Lab – Light Metering Lab**  
**Lecture – FOCUS AND DEPTH OF FIELD**

### **WEEK THREE**

**Lecture – OPTICS, LENSES, AND LIGHTING**  
**Lab – Focal Lengths Lab**  
**Lecture – LIGHTING AND CHARACTERISTIC CURVES**

### **WEEK FOUR**

**Lecture – COLOR THEORY**  
**Lab – Light Painting Lab**  
**Lecture – FUTURE OF CINEMATOGRAPHY**

### **WEEK FIVE**

**Lecture – REVIEW FOR FINAL AND WATCH DOCUMENTARY**  
**Lab – Slow Motion Lab**  
**FINAL EXAM – In normal lecture classroom July 14th at 5:45 pm**

## **SCHOOL POLICIES:**

### **- Changes to Syllabus:**

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and sent via email.

### **- Online Instructor Evaluation:**

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses.

A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in Campus Connect.

### **- Email:**

Email is the primary means of communication between faculty and students enrolled in this course outside of class time. Students should be sure their email listed under "demographic information" at Campus Connect is correct.

### **- Academic Integrity and Plagiarism:**

This course will be subject to the university's academic integrity policy. More information can be found at <http://academicintegrity.depaul.edu/> If you have any questions be sure to consult with your professor.

### **- Academic Policies:**

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the [University Academic Calendar](#). Information on enrollment, withdrawal, grading and incompletes can be found at <http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx>.

### **- Incomplete:**

An incomplete grade is given only for an exceptional reason such as a death in the family, a serious illness, etc. Any such reason must be documented. Any incomplete request must be made at least two weeks before the final, and approved by the Dean of the College of Computing and Digital Media. Any consequences resulting from a poor grade for the course will not be considered as valid reasons for such a request.

### **- Resources for Students with Disabilities:**

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential.

To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at:

Lewis Center 1420, 25 East Jackson Blvd.  
Phone number: (312)362-8002  
Fax: (312)362-6544  
TTY: (773)325.7296