



**Department of Psychology**  
**Psychology 511.05 (L01) - Art, Vision & the Disordered Eye**  
**Winter 2010 – Course Outline**

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<b>Class Time:</b> Tu/Th 11:00 -12:15	<b>Classroom:</b> PF 114
<b>Course Instructor:</b> Dr. Donald Kline	<b>Phone:</b> 220-4969
<b>Office:</b> Admin. 237	<b>Email:</b> <a href="mailto:donkline@ucalgary.ca">donkline@ucalgary.ca</a>
<b>Course Blackboard Site:</b>	<a href="http://blackboard.ucalgary.ca/">http://blackboard.ucalgary.ca/</a>
<b>Office Hours:</b> Tu/Th 1:00-2:00 P.M. & by appointment	

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**I. Course Overview and Learning Goals**

This seminar course will: 1.) Review the basic aspects of visual functioning (e.g., optical functions of the eye, neural aspects of vision, perception of depth in 2-D displays, colour vision), 2.) Examine several visual dysfunctions including optical disorders, retinal/neural disorders, colour vision deficiencies, and visual aging and their effects on visual function, and 3.) Evaluate the possible effects of different visual disorders (e.g., astigmatism, myopia, cataracts, macular degeneration, colour vision problems, retinopathy) on the work of well-known artists. Artists considered will include Mary Cassatt, Paul Cezanne, el Greco, Edgar Degas, Claude Monet, Rembrandt, Pierre-August Renoir, and Vincent van Gogh. Other artists, as selected by students for inclusion in the required Term Project may also be included.

The learning objectives for this course are to: 1.) increase student understanding of basic visual functioning, 2.) enhance student appreciation of visual art and some of the perceptual principles that underlie artistic representation 3.) enhance student knowledge of different forms of visual loss and dysfunction, 4.) provide an “experiential” perspective on the effects of visual loss on “real-world” tasks, and 5.) advance student media and presentation skills.

These objectives will be realized over 3 course "modules". In **Module 1 (Basic Visual Functions)** we'll review basic visual functioning and some of the common visual disorders that have affected the work of well-known artists. **Module 2 (Art & Visual Dysfunction)** will consist of instructor-presented cases on visual disorders in several artists. In **Module 3 (Student Projects & Presentations)**, students will carry out a project on a topic related to art and vision and/or visual dysfunction. This project will be presented in-class (e.g., PowerPoint, Keynote, HTML) and then submitted in final revised form for evaluation.

## II. Prerequisites

Psyc 312: Experimental Design and Quantitative Methods for Psychology and consent of the Department.

## III. Required Readings

1. Selected chapters in Marmor, M.F., & Ravin, J.G. (1997). *The Eye of the Artist*. St. Louis: Mosby (See section Abbreviated “**M&R**” in Class/Exam Schedule, Section VII).
2. Supplementary Reading Handouts as per Lecture/Exam Schedule (see Outline Section XX)

*Note: The Eye of the Artist* book is out of print; a course readings pack that includes the chapters assigned from this book can be purchased from PSYCHS (The Association of Undergraduate Psychology Students) in Admin 170.

## IV. Evaluation, Examinations and Grading

**A. Course Components.** Course grades will be based on the 5 following components:

1. Module 1 Term Exam:	25% of Grade
2. Module 2 Term Exam:	25% of Grade
3. In-class Presentation of Term Project:	15% of Grade
4. Participation/Attendance:	10% of Grade
5. Final Version of Term Project/Learning Tool:	25% of Grade

Details regarding each course component are presented in sections B. through F. below.

**B. Exam Format.** The exams at the conclusion of course Modules 1 and 2 will be composed of short-answer questions. A complete and correct answer to any question is worth 2 points, graded to the nearest .5 points (i.e., 0, 0.5, 1.0, 1.5 or 2.0 points). A fully correct (i.e., 2-point) response could consist of a couple of lines or sentences, a listing of a number of points or issues, and/or an appropriately labeled diagram or graph. The first two-thirds of the questions on each exam will be taken from the assigned reading material; the final one-third will be based on material presented in-class. Thus, it is essential to attend class regularly, and if a class is missed, to get access to notes for that class. The date of each topic and reading assignment, lecture topic and exam is presented in the Class /Exam Schedule (Section XX).

**C. Term Exams 1 and 2 (25% x 2 = 50%).** Each of the two Term Exams will consist of 21 short-answer questions, 14 taken from assigned reading and 7 from the in-class lecture material. You will be required to answer 17 short-answer questions of 21 (**Note:** If you miss an exam, a note from a physician or the Dean's office must be submitted to the course instructor indicating a legitimate basis for the absence.)

**D. In-Class Presentation of Term Project (15%).** In Module 3 of the course, students will give an in-class presentation of their Term Project (see also section F. following). This oral presentation should be designed to provide an interesting and effective learning experience for the other students. This could take a variety of forms, including a well-narrated PowerPoint, Keynote or HTML-based presentation, or an oral presentation with slides, transparencies or

printed handouts. Including time for questions, the presentation should not exceed more than half a 75-minute class period (i.e., about 35 minutes). This means a presentation should be about 20 to 25 minutes in duration, with an additional 10 to 15 minutes for class discussion and questions. The in-class discussion and feedback should provide a valuable source of feedback for revising your project prior to its submission.

*The first step in planning your presentation is to pick a date for its presentation with the instructor – this should be done in consultation as early in the term as possible!*

**E. Class Participation/Attendance (10%).** Since this is a small class in which student presenters will depend on their peers for discussion, questions and feedback, consistent participation is essential. For this reason, attendance will be recorded for purposes of course credit. 10% of the grade is based on class attendance and participation in discussion. For each class missed without a formally approved excuse for absence (e.g., official note from a physician, the University Disability Centre or Dean’s Office), 1% will be deducted from the 10% for Class Participation/Attendance (i.e., if 10 or more classes are missed no credit will be received for Participation/Attendance component).

**F. Course Project/Learning Tool (25%).** The Term Project will consist of a “learning tool” on a topic related to vision and art broadly defined. This project can take various forms including a PowerPoint show, a Web-based tutorial, or even a written paper. Given that the emphasis in this course is on vision and art, the inclusion of pictures, simulations and/or other graphical demonstrations of the issues or points being presented are likely to enhance the effectiveness of the project as well as facilitate in-class presentation and discussion.

Possible Project topics might include: 1.) the impact of a particular visual disorder (e.g., macular degeneration, loss of colour vision) or set of disorders on the work of an individual artist (e.g., painter, designer, sculptor), 2.) the general effects of a particular type of visual loss (e.g., colour blindness or macular degeneration) on the performance of everyday tasks, 3.) a systematic analysis of a set of visual principles in art works (e.g., additive light mixing through pointillism; light and contrast in art; the presentation of 3-D depth in painting in historically and/or cross-culturally). If a student prefers to carry out a project on some other topic(s) of his or her choice related to vision and art, it should be *discussed with and approved in advance* by the course instructor. A sample of possible project topics is presented in section X of this outline.

To allow for the implementation of revisions, including those suggested by class feedback, the project is due during the Registrar-scheduled final exam period (April 19-29):

**Project Due:** Tuesday, April 22

**Deduction for late submissions:** 2.5% per day late

## **V. Assignment of Grades**

Grades will be assigned on the distribution that is not more restrictive than the one below:

A+ 95-100%

B+ 80-84%

C+ 67-71%

D+ 54-58%

A	90-94%	B	76-79%	C	63-66%	D	50-53%
A-	85-89%	B-	72-75%	C-	59-62%	F	0-49%

If warranted by class performance and exam difficulty, grade cutoffs can be lowered from these levels for any given exam.

As stated in the University Calendar, it is at the instructor's discretion to round off either upward or downward to determine a final grade when the average of term work and final examinations is between two letter grades. To determine final letter grades in this course, final percentage grades will be rounded up or down to the nearest whole percentage (e.g., 89.5% will be rounded up to 90% = A but 89.4% will be rounded down to 89% = A-).

## **VI. Important Notices**

### **A. Reappraisal of Grades**

A student who feels that a piece of graded term work (e.g., term paper, essay, test) has been unfairly graded, may have the work re-graded as follows. The student shall discuss the work with the instructor within 15 days of being notified about the mark or of the item's return to the class. If not satisfied, the student shall immediately take the matter to the Head of the department offering the course, who will arrange for a reassessment of the work within the next 15 days. The reappraisal of term work may cause the grade to be raised, lowered, or to remain the same. If the student is not satisfied with the decision and wishes to appeal, the student shall address a letter of appeal to the Dean of the faculty offering the course within 15 days of the unfavourable decision. In the letter, the student must clearly and fully state the decision being appealed, the grounds for appeal, and the remedies being sought, along with any special circumstances that warrant an appeal of the reappraisal. The student should include as much written documentation as possible.

### **B. Plagiarism and Other Academic Misconduct**

Intellectual honesty is the cornerstone of the development and acquisition of knowledge and requires that the contribution of others be acknowledged. Consequently, plagiarism or cheating on any assignment is regarded as an extremely serious academic offense. Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Students should examine sections of the University Calendar that present a Statement of Intellectual honesty and definitions and penalties associated with Plagiarism/Cheating/Other Academic Misconduct.

### **C. Academic Accommodation**

It is the student's responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodation and have not registered with the Disability Resource Centre, please contact their office at 403-220-8237. Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than 14 days after the start of this course.

### **D. Absence From A Test/Exam**

Makeup tests/exams are NOT an option without an official University medical excuse (see the University Calendar). A completed Physician/Counselor Statement will be required to confirm absence from a test/exam for health reasons; the student will be required to pay any cost associated with this Statement. Students who miss a test/exam have 48 hours to contact the instructor and to schedule a makeup test/exam. Students who do not schedule a makeup test/exam with the instructor within this 48-hour period forfeit the right to a makeup test/exam. At the instructor's discretion, a makeup test/exam may differ significantly (in form and/or content) from a regularly scheduled test/exam. Except in extenuating circumstances (documented by an official University medical excuse), a makeup test/exam must be written within 2 weeks of the missed test/exam.

#### **E. Evacuation Assembly Point**

In case of an emergency evacuation during class, students must gather at the designated assembly point nearest to the classroom. The list of assembly points is found at

<http://www.ucalgary.ca/emergencyplan/assemblypoints>

Please check this website and note the nearest assembly point for this course. The primary assembly point for the Education Block is the Scurfield Hall Atrium; the alternate assembly point is the Professional Faculties Food Court.

#### **F. Student Organizations**

Psychology students may wish to join the Psychology Undergraduate Students' Association (PSYCHS). They are located in Administration 170 and may be contacted at 403-220-5567.

<b>Student Union VP Academic:</b>	Phone: 403-220-3911	<a href="mailto:suypaca@ucalgary.ca">suvpaca@ucalgary.ca</a>
<b>Student Union Faculty Rep.:</b>	Phone: 403-220-3913	<a href="mailto:socialscirep@su.ucalgary.ca">socialscirep@su.ucalgary.ca</a>

#### **G. Important Dates:**

The last day to drop this course with no "W" notation and **still receive a tuition fee refund** is **Jan 22<sup>nd</sup>, 2010**. Last day for registration/change of registration is **Jan 26<sup>th</sup>, 2010**. The last day to withdraw from this course is **Apr 16<sup>th</sup>, 2010**.

## VII. Class /Exam Schedule - Winter 2010

A "T#" appearing after the page numbers in the Tutorial column below indicates that a Web-based Learning Tutorial with that number (see Section IX below for a list of "Tutorials on the Web") contains information relevant to that topic.

### Module 1 – Basic Visual Functions & Loss (Jan. 14 to Feb. 11)

<u>Date:</u>	<u>Topic:</u>	<u>Have Read:</u>	<u>Tutorial</u>
<b>Jan. 12 (T)</b>	Introduction to Course Vision: Eye to Brain	--- <b>M&amp;R</b> Chap 1 (Marmor)	--- ---
<b>Jan. 14 (R)</b>	Vision: Eye to Brain Depth in 2-D Displays	--- <b>L&amp;S</b> Reading	---
<b>Jan. 19 (T)</b>	Color Vision & Color Deficiencies Optical Disorders	<b>WLK</b> Reading <b>Gold</b> Reading p. 545-554	<b>T3,T4</b> <b>T1, T2</b>
<b>Jan. 21 (R)</b>	Optical Disorders Retinal & Neural Disorders	--- <b>Gold</b> Reading p. 554-564	<b>T1,T2,T7</b> <b>T7</b>
<b>Jan. 26 (T)</b>	Retinal & Neural Disorders Visual Aging	<b>Gold</b> Reading p. 554-564 <b>M&amp;R</b> Chap 2 (Weale)	--- <b>T7</b>
<b>Jan. 28 (R)</b>	Art, Science & Perception	---	---
<b>Feb. 2 (T)</b>	Seurat & Pointillism	<b>M&amp;R</b> Chap 11 (Lanthyony)	---
<b>Feb. 4 (R)</b>	<i>Exam 1: Module 1 Reading &amp; Lecture Material</i>		

### Module 2: Art & Visual Dysfunction (February 11 to March 17)

<u>Date:</u>	<u>Topic:</u>	<u>Have Read:</u>	<u>Tutorial</u>
<b>Feb. 9 (T)</b>	Review: Exam 1 Photography Workshop	--- ---	--- ---
<b>Feb. 11 (R)</b>	The Impressionists	<b>In-class Video</b>	---
<b>Feb. 13-21</b>	<i>Reading Week – No Classes</i>		
<b>Feb. 23 (T)</b>	The Impressionists	<b>In-class Video</b>	---
<b>Feb. 25 (R)</b>	The Impressionists	<b>In-class Video</b>	<b>T7</b>
<b>Mar. 2 (T)</b>	The Impressionists	<b>In-class Video</b>	<b>T7</b>
<b>Mar. 4 (R)</b>	Renoir, Myopia & Impressionism el Greco & Astigmatism	<b>M&amp;R</b> Chap 3 (Ravin) <b>M&amp;R</b> Chap 4 (Ravin)	<b>T7</b>
<b>Mar. 9 (T)</b>	el Greco & Astigmatism – ctd Rembrandt: Visual Aging	---	<b>T7</b>
<b>Mar. 11 (R)</b>	Monet: Cataracts Cassat: Cataracts & Retinopathy	<b>M&amp;R</b> Chap 14 (Ravin) <b>M&amp;R</b> Chap 15 (Ravin)	<b>T7</b>
<b>Mar. 16 (T)</b>	Cassat: Cataracts & Retinopathy Degas: Retinopathy ctd	--- <b>M&amp;R</b> Chap 17 (Rav&Ken)	<b>T7</b>
<b>Mar. 18 (R)</b>	van Gogh: Xanthopsia?	<b>M&amp;R</b> Chap 10 (Rav&Marm)	<b>T7</b>

<b>Mar. 23 (T)</b>	<b>Exam 2: Module 2 Reading &amp; In-Class Material</b>
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**Module 3: Presentation of Student Projects (March 25 to April 15)**

<b>Date:</b>	<b>Student Presenter (SP) &amp; Topic:</b>
<b>Mar. 25 (R)</b>	Review Exam 2 SP1:
<b>Mar. 30 (T)</b>	SP2: SP3:
<b>April 1 (R)</b>	SP4: SP5:
<b>April 6 (T)</b>	SP6: SP7
<b>April 8 (R)</b>	SP8: SP9:
<b>April 13 (T)</b>	SP10: SP11:
<b>April 15 (R)</b>	SP12:
<b>Exam Period April 19-29</b>	
<b>April 22 (T)</b>	<b>Final Version of Term Project Due April 22</b>

**VIII. Course Readings - Winter 2010**

**Modules 1 & 2**

1. Goldstein, E. B. (2002). Clinical aspects of vision and hearing. *Sensation & Perception* (6<sup>th</sup> Ed., pp. 545-564). Pacific Grove, CA: Brooks Cole. (Abbreviated **Gold** in the Class/Exam Schedule)

2. Levine, M.W. (2000). *Levine and Shefner's Fundamentals of Sensation and Perception* (3<sup>rd</sup> Ed.). Oxford: Oxford University Press. (Abbreviated **L&S** in the Class/Exam Schedule)
3. Marmor, M.F., & Ravin, J.G. (1997). *The Eye of the Artist*. St. Louis: Mosby. (Abbreviated **M&R** in the Class/Exam Schedule)
4. Wolfe, J.M., Kluender, K.R., Levi, D.M., Bartoshuk, L.M., Herz, R.S., Klatzky, R.L., Lederman, S.J., & Merfeld, D.M. (2009). The perception of colour. In *Sensation & Perception* (2<sup>nd</sup> Ed., pp. 104-131). Sunderland, MA: Sinauer Associates. (Abbreviated **WKL** in the Class/Exam Schedule)

### IX. Tutorials on the Web

Students and staff in the Vision & Aging Lab have created a several computer-based tutorials to facilitate your learning of selected topics on vision or vision and art. These tutorials (listed below), can be accessed on our Lab's home page:

[www.psych.ucalgary.ca/pace/VA-Lab](http://www.psych.ucalgary.ca/pace/VA-Lab)

Tutorial	Author(s)
<b>T1 - Refraction of Light</b>	Lynk, Kline & Cooney
<b>T2 – Corrective Lenses</b>	Bergerman, Kline, Lynk & DeMaria
<b>T3 - Bases of Colour Vision</b>	Wagner & Kline
<b>T4 - Colour Perception in Everyday Life</b>	Kokotailo & Kline
<b>T5 - Visual Size: Calculating a Visual Angle</b>	Kline, Lynk & Cooney
<b>T6 - Visual Development</b>	Salamanca & Kline
<b>T7 - Art, Vision &amp; the Disordered Eye</b>	Coldham, Cooney & Kline

Background information on a wide variety of topics related to the visual system, visual functioning and visual disorders can be found on the Psyc 369 Psychology Instruction Project (PIP) Web Site:

<http://www.ucalgary.ca/pip369/>

### X. Some Sample Topics for Student Projects on Art and Vision

#### A. Artists With a Disorder of or Related to Vision

1. The Case of the Color Blind Painter – in *An Anthropologist on Mars* by Oliver Sacks
2. Charles Meryon (color vision deficiency) - see chapter 9 in *The Eye of the Artist*
2. Georgia O'Keefe (macular degeneration) - see chapter 19 in *The Eye of the Artist*



3. Picasso (migraines)
4. Camille Pissarro (tearing, myopia, corneal ulcers) - see chapter 16 in *The Eye of the Artist*; see also article *Vision of the Famous: the Artist's Eye* by Elliott & Skaff
5. Euphronios (presbyope) - see chapter 5 in *The Eye of the Artist*
6. Edvard Munch (interocular hemorrhage) - see chapter 18 in *The Eye of the Artist*
7. Turner (cataracts?) - see chapter 8 in *The Eye of the Artist*; also article *What if Renoir Had Worn Glasses?* by Arlette Brauer
8. John Constable (color deficiency) – see article *Vision of the Famous: the Artist's Eye* by Elliott & Skaff
9. Michelangelo (visual aging) - see article *Vision of the Famous: the Artist's Eye* by Elliott & Skaff
10. Matisse (myopia)
11. Titian (visual aging, cataract) - see chapter 8 in *The Eye of the Artist*
12. Leonard da Vinci (visual aging) - see article *Vision of the Famous: the Artist's Eye* by Elliott & Skaff

#### B. Effects of Visual Disorders in Everyday Life

1. A culture with widespread inherited colour blindness – see Book 1 in *Island of the Colour Blind* by Oliver Sacks.
2. Personal experiences of the achromats – see K. Nordby (1990). In R.F. Hess, L.T Sharpe, & K. Nordby (Eds.) *Night Vision: Basic, Clinical and Applied Aspects*.
3. Everyday tasks through aging eyes - see articles by Branch, Horowitz, & Carr, 1989; Kosnik, Winslow, Kline, Rasinski, & Sekuler, 1988; Kosnik, Sekuler & Kline, 1990; Kline, Kline, Kosnik, Schieber & Sekuler, 1992; Morgan, 1988; Rumsey, 1993.
4. Visual effects of migraines on everyday tasks (Picasso?)
5. Agnosia as seen through agnosic art – see M.J. Farrah (1995). *Visual Agnosia*, Cambridge MA: MIT Press.

#### C. Understanding Visual Principles Through Art

1. Perspective and depth in different art forms & cultures- see chapter 12 in *The Eye of the Artist*; also Chap. 7 (A Truly Marvelous Feast: Visual Perspective) and Chap. 8 (Perspective and the History of Art) in R. L. Solso, *Cognition and the Visual Arts*.
2. Additive color mixture through pointillism (i.e., G. Seurat; P. Signac) - see chapter 11 in *The Eye of the Artist*
3. Illusion & optical art - see chapter 13 in *The Eye of the Artist*
4. Artists' use of optical devices in composition - see Steadman's "In the Studio of ver Meer" in *The Artful Eye*
5. Light in art- see chapter 7 in *The Eye of the Artist*
6. Edge effects in art (Mach bands) - see chapter 6 in *The Eye of the Artist*
7. Color in art - see chapter 8 in *The Eye of the Artist*