Course Syllabus





CSCM-315-01 CalArts' School of Critical Studies Main Building, F200

Professor Douglas Goodwin
Office hours by appointment
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W 2:00 PM - 3:50 PM

What is done by what is called myself is, I feel, done by something greater than myself in me.

-James Clerk Maxwell

How does perception make sense of the world? How is the sensation of light and sound rendered into recognizable imagery? How does imagery act on us? And how can images change our physiology? We will proceed by studying apparent failures in perception: optical illusions, magic tricks and mirror box therapies designed to ease pain from amputated limbs. We conclude with an appraisal of computerized tomography (CT) scans, functional Magnetic Resonance Imaging (fMRI) and other data-imaging technologies.

Assignments Summary:

| Date | Details | |
|------------------|--|----------------|
| Wed Son 21, 2016 | LECTURE: Waveforms. The electro-magnetic spectrum (https://canvas.instructur/calendar?event_id=1180333&include_contexts=course_1074304) | re.com 12am |
| Wed Sep 21, 2016 | WATCH: Slide deck on Waves and Fourier Transforms (https://canvas.instructure/calendar?event_id=1180335&include_contexts=course_1074304) | .com 12am |
| | LECTURE: IN/DIRECT REALISM (https://canvas.instructure.com/calendar?event_id=1180336&include_contexts=course_1074304) | 12am |
| Wed Sep 28, 2016 | QUIZ: Fourier, transforms, waves, signals (https://canvas.instructure.com/courses/1074304/assignments/5280542) | due by 4pm |
| | READ: First Dialogue between Hylas and Philonous (https://canvas.instructure.com/courses/1074304/assignments/5280556) | due by 4pm |
| | READ: This Is a Simulation (https://canvas.instructure.com/courses/1074304 /assignments/5321511) | due by 11:59pm |
| Wed Oct 5, 2016 | QUIZ: Early Theories of Vision (https://canvas.instructure.com/courses/1074304/assignments/5280539) | due by 4pm |

| Date | Details | |
|------------------|---|----------------|
| | READ: Magic and the Brain: Teller Reveals the Neuroscience of Illusion (https://canvas.instructure.com/courses/1074304/assignments/5280558) | due by 4pm |
| | READ: Peter Strawson, Perception and its Objects (https://canvas.instructure.com/courses/1074304/assignments/5280560) | due by 4pm |
| | DEBATE: Berkeley vs. Locke (https://canvas.instructure.com/courses/1074304/assignments/5280547) | due by 5pm |
| | LECTURE: The Intentionality of Perception (https://canvas.instructure.com/calendar?event_id=1180342&include_contexts=course_1074304) | 12am |
| | LAB: Perform a magic trick (https://canvas.instructure.com/courses/1074304/assignments/5280550) | due by 4pm |
| Wed Oct 12, 2016 | READ: excerpt from The Intrinsic Quality of Experience, Gilbert Harman (https://canvas.instructure.com/courses/1074304/assignments/5280555) | due by 4pn |
| | READ: The Argument from Illusion, A. J. Ayer (https://canvas.instructure.com/courses/1074304/assignments/5280563) | due by 4:59pn |
| | DEBATE: Newton vs. Huygens (https://canvas.instructure.com/courses/1074304/assignments/5280549) | due by 5pn |
| Wed Oct 19, 2016 | LECTURE: Content or no-content? (https://canvas.instructure.com/calendar?event_id=1180339&include_contexts=course_1074304) | 12an |
| | READ: Perception and Content, Bill Brewer (https://canvas.instructure.com/courses/1074304/assignments/5280559) | due by 4pm |
| | READ: The Nonconceptual Content of Experience, Tim Crane 1992 (https://canvas.instructure.com/courses/1074304/assignments/5280567) | due by 4pn |
| | DEBATE: between Emission Theory and Intromission Theory (https://canvas.instructure.com/courses/1074304/assignments/5280548) | due by 5pn |
| Wed Oct 26, 2016 | LECTURE: The Information Available in Pictures (https://canvas.instructure.com/calendar?event_id=1180340&include_contexts=course_1074304) | 12an |
| | QUIZ: Gibson's Invariants (https://canvas.instructure.com/courses/1074304/assignments/5280538) | due by 4pn |
| | READ: Cezanne's Doubt, Maurice Merleau-Ponty (https://canvas.instructure.com/courses/1074304/assignments/5280553) | due by 4pn |
| | READ: Spatial Vision (https://canvas.instructure.com/courses/1074304/assignments/5280562) | due by 4pn |
| | READ: The Information Available In Pictures, James J. Gibson (https://canvas.instructure.com/courses/1074304/assignments/5280564) | due by 4pn |
| | LAB: recreate painting by Cézanne, Pollock painting (https://canvas.instructure.com/courses/1074304/assignments/5280551) | due by 11:59pn |
| Wed Nov. 0, 2010 | LECTURE: The Subjectivity of Experience / Gestalt (https://canvas.instructure.com/calendar?event_id=1180343& | 12an |
| Wed Nov 2, 2016 | include_contexts=course_1074304) | |

| Date | Details | |
|------------------|--|----------------|
| | READ: "What is it like to be a bat?" by Thomas Nagel (https://canvas.instructure.com/courses/1074304/assignments/5280570) | due by 4pm |
| | READ: The Intelligence of Vision: An Interview with Rudolf Arnheim (https://canvas.instructure.com/courses/1074304/assignments/5280565) | due by 4pm |
| | DEMONSTRATION: Recomposing a famous Gestalt illusion (https://canvas.instructure.com/courses/1074304/assignments/5321523) | due by 11:59pm |
| | LECTURE : Disjunctivism (https://canvas.instructure.com/calendar?event_id=11803448 include_contexts=course_1074304) | 12am |
| | VIDEO: Diana Deutsch, the Puzzle of absolute pitch (https://canvas.instructure.com/calendar?event_id=1180334&include_contexts=course_1074304) | 12am |
| Wed Nov 9, 2016 | READ: Introduction to Disjunctivism, by Byrne and Logue (https://canvas.instructure.com/courses/1074304/assignments/5280557) | due by 4pm |
| | READ: The puzzle of absolute pitch, Diana Deutsch (https://canvas.instructure.com/courses/1074304/assignments/5280568) | due by 4pm |
| Wed Nov 16, 2016 | LECTURE: ACTIVE PERCEPTION / MOTION PICTURES (https://canvas.instructure.com/calendar?event_id=1180345& include_contexts=course_1074304) | 12am |
| | LECTURE: The frequency of perception and bird-flight (https://canvas.instructure.com/calendar?event_id=1180346& include_contexts=course_1074304) | 12am |
| | READ excerpt from Action in Perception, Alva Noë (https://canvas.instructure.com/courses/1074304/assignments/5280554) | due by 4pm |
| | READ: Shuttering Mechanisms of Zoetrope and Zoopraxiscope AND Why Do Movies Move?, Alvy Ray Smith (https://canvas.instructure.com/courses/1074304/assignments/5280561) | due by 4pm |
| | QUIZ: JJ Gibson (https://canvas.instructure.com/courses/1074304/assignments/5280540) | due by 4:59pm |
| | READ excerpt from Action in Perception, Alva Noë (https://canvas.instructure.com/courses/1074304/assignments/5321527) | due by 11:59pm |
| Wed Nov 23, 2016 | CANCEL (https://canvas.instructure.com/calendar?event_id=1180347&include_contexts=course_1074304) | 12am |
| Wed Nov 30, 2016 | ACTIVITY: Measure the sensitivity of the skin behind your partner's calf (https://canvas.instructure.com/calendar?event_id=1180349& include_contexts=course_1074304) | 12am |
| | LECTURE: OTHER MODALITIES: TOUCH AND SMELL (https://canvas.instructure.com/calendar?event_id=1180348& include_contexts=course_1074304) | 12am |
| | QUIZ: perception and matter (https://canvas.instructure.com/courses/1074304/assignments/5280541) | due by 4pm |
| | READ: "The Nobility of Sight" by Hans Jonas (https://canvas.instructure.com/courses/1074304/assignments/5280566) | due by 4pm |

| Date | Details | |
|-----------------|---|----------------|
| | READ: Naturalism, introspection, and direct realism about pain (https://canvas.instructure.com/courses/1074304/assignments/5321509) | due by 11:59pm |
| Fri Dec 2, 2016 | ASSIGNMENT DUE! Report on three artworks that followed discoveries in perception (https://canvas.instructure.com/courses/1074304/assignments/5280545) | due by 4pm |
| | ACTIVITY: Can you sense with your eyes closed? Can you sense when people are looking at you? (https://canvas.instructure.com/calendar?event_id=1180351&include_contexts=course_1074304) | 12am |
| Wed Dec 7, 2016 | LECTURE: Unconscious Perception (https://canvas.instructure.com/calendar?event_id=1180350&include_contexts=course_1074304) | 12am |
| | READ: "Unconscious Perception" by Prinz (https://canvas.instructure.com/course/1074304/assignments/5280569) | s due by 4pm |
| | Roll Call Attendance (https://canvas.instructure.com/courses/1074304/assignments/ | 5351223) |

Policies

Absences

As soon as the add/drop period has concluded you are allowed up to 3 absences in this class. Any more than that will earn you a grade of Incomplete (I) or No Credit (NC) depending on the whim of the instructor. This is not recommended.

Grading Policy

CalArts does not grade on the A-F scale. Rather:

| CalArts grade | external GPA | description |
|----------------|--------------|-------------------------|
| High Pass (HP) | 4 | Passing with Excellence |
| Pass (P) | 3 | Passing with Quality |
| Low Pass (LP) | 2 | Passing |
| Incomplete (I) | | Temporary evaluation |
| No Credit (NC) | 0 | No Credit |

A grade of Incomplete (I) is a temporary evaluation. Through agreement between student and instructor, Incompletes must be made up during the following semester. Incomplete evaluations not made up within the specified period of time will convert to NC.

The No Credit (NC) grade indicates that the student's work did not meet the criteria for credit. NC evaluations may not be converted to credit bearing grades except by petition to the deans council initiated by the instructor of the class or, in the instructor's absence, the dean of the school offering the course.

The following changes to the grading policy went into effect for all students beginning Fall 2013:

- NC (no credit) grades will appear on a student's permanent academic record
- NX (insufficient attendance) grades will no longer be used
- Withdrawal Period will be extended until the 10th week of the semester

NC grades must appear on external records to ensure accurate reporting to peer institutions and for financial aid reporting. While CalArts does not use a Grade Point Average (GPA) as part of its marking system, the following formula will be used for external purposes: HP =4.00, P=3.00, LP=2.00, NC=0.00.

Students will no longer receive NX grades, but the longer withdrawal period (through the 10th week of the semester) will provide an option for students to exit a course without receiving a failing grade. To drop a course during the extended withdrawal period, a student will obtain the Course Withdrawal form from the Registrar's Office, consult with his or her mentor, obtain the course instructor's signature verifying the last date of attendance, and return the form to the Registrar's Office. The course will remain on the student's record with a "W" grade, but the grade of "W" will have no effect on the grade point average.

If a student misses more than 3 sessions of class and does not pursue the withdrawal option, a NC will be given and will appear on external records.

To read the revised Grading Policy in its entirety as well as frequently asked questions, click on the link below:

CalArts grading policy (https://my.calarts.edu/policy/3-1-8-1-grading-policy-beginning-fall-2013)

Change of Grade

In the interests of operating an equitable grading system, Critical Studies stringently enforces CalArts' change of grade policy. Students have one semester upon receiving an "Incomplete" grade to make up any missing coursework and/or projects. If this work has not been completed by the end of the semester, the Incomplete converts automatically to a "No Credit". After that time, changes require the approval of Deans Council. Deans Council will approve such grade changes only in the case of extreme, extenuating circumstances or in cases of

Services for Students With Disabilities

CalArts will provide reasonable accommodations to students with disabilities who have registered with the Student Affairs office. Registration with the Office of Student Affairs is on a voluntary, self-identifying basis. Services are available only after a student has presented certified, current documentation of the disability from an appropriate medical or educational specialist, and this documentation has been reviewed and accepted as complete. Please navigate to the Disabilities page ((http://calarts.edu/student-services/disabilities) for extensive information on services for students with disabilities.

Plagiarism

Critical Studies endeavors to teach students the essential skills and basic ethics involved in any academic enquiry. To this end, we are committed to observing the policy on plagiarism set out in the CalArts Course Catalog. This stipulates that plagiarism is the use of ideas and/or quotations (from the internet, books, films, television, newspapers, articles, the work of other students, works of art, media, etc.) without proper credit to the author/artist. Critical Studies holds to the view that plagiarism constitutes intellectual theft and is a serious breach of acceptable conduct. It is also the policy of CalArts that students who misrepresent source material as their own original work and fail to credit it have committed plagiarism and are subject to disciplinary action. In the case of Critical Studies, any student caught plagiarizing will immediately be given a no credit grade for that class. The student will not be allowed to re-write the paper, and if there is further evidence of plagiarism, Critical Studies will recommend more severe disciplinary action, including suspension or dismissal.

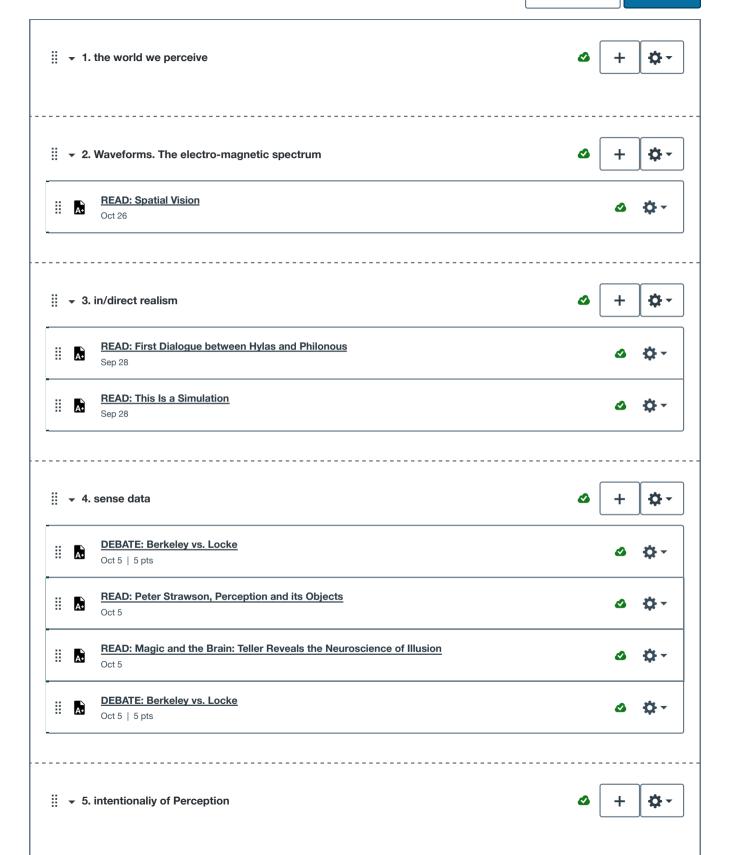
If you have any questions regarding plagiarism or want direction on how to credit source material, ask the member of faculty and refer to reference guides on permanent reserve in the CalArts library. The CalArts reference librarians may be able to offer additional information as well.

The pink mirror I 30 questions

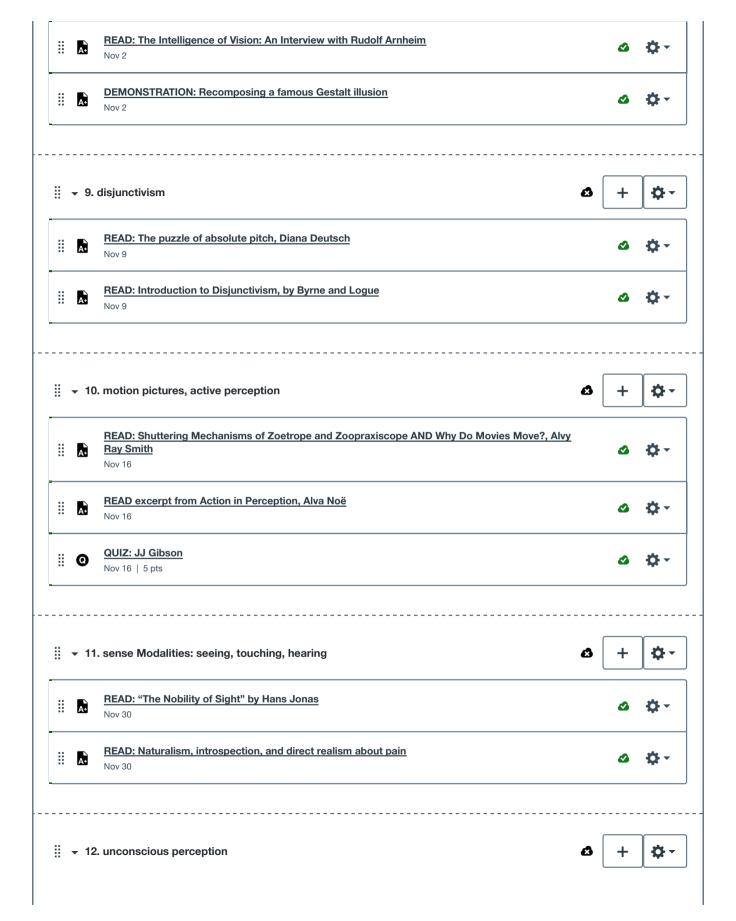
- 1. 'Blue' is a group of photons (light) vibrating at specific frequencies. Our eyes gather that light and render the light into Blue. Is there a Blue part of the brain that receives this light?
- 2. 40+ years ago researchers into artificial intelligence thought that they could give computers sight by adding a camera. What happened? Why is it so hard to teach machines to see?
- 3. A black bear's sense of smell is many times more acute than his vision, and there is evidence that bear's 'image' the world with their noses. How would seeing by smell be different than vision?
- 4. Ask the class how many of them have experienced phantom phone rings. Get a rough count of how many report hearing phantom ringtones and feeling phantom vibrations. Now determine what percentage of rings are phantoms. Discuss why it may be better to trade a few false positives for missing the ring entirely. Compare how smoke alarms are programmed.
- 5. Auditory signals are gathered in the graduated spiral of your cochlea. This organ is lined with tiny hairs that vibrate on receiving waves of specific frequencies. This ear performs frequency analysis equivalent to a Fourier transform. Please detail the mechanism of the ear and discuss the significance of transforms.
- 6. Can you imagine things you have never seen? How about a new color, say reddish-green?
- 7. can you perceive colors in a room illuminated by green light? What colors do you see? how do these colors change over time?
- 8. Can your senses change? ie, can you get better at sensing certain qualities?
- 9. Distance will make a mountain seem steeper than it is. Can you explain why?
- 10. How can emotion alter your perception? Give three examples and propose an experiment to try.
- 11. How do plants know to make brightly colored flowers when they cannot perceive color? What cues do they use to shape their blossoms?
- 12. How good is the back of you legs at separating the stimulus from two closely spaced pins?
- 13. How would the world look different if you could separate your eyes by one meter? Two meters? Five meters?
- 14. Is it possible that when I see blue you see red? Would it matter?
- 15. It is possible to learn to see with your tongue. Do you think this would 'feel' like vision? Can you describe what that would be like?
- 16. It's dark and you turn on a bright light. It hurts, somewhere, but where? What is being hurt and why does the pain go away?
- 17. My cat stares at my legs before launching a perfect jump. What is he doing to prepare?
- 18. Olfaction (our sense of smell) might be described as a bag of locks seeking specific molecular keys. How does this differ from the other senses? What's holding back progress on prosthetic

- his or her hand. Now mask the real hand with a piece of foamcore and start abusing the 'hand'.

 Can your subject feel this abuse?
- 20. Please construct an Ebbinghaus illusion using containers of colored fluid. Verify that your subjects are convinced that the central (red) vessels are different sizes. Now ask them to grasp each red vessel. Are their grasps fooled by the illusion?
- 21. Prepare everything you need to perform the thermal grill illusion: two forks, one cup of warm water and one cup of ice water. Heat the one fork, chill the other, intertwine the forks then touch the tines to the forearm of a seated person. What sensation is generated? Why?
- 22. Ride up in an elevator. There is a chance that you will have sensations of riding that elevator for the rest of the day. What is making you feel this way?
- 23. The blind spot illusion clearly illustrates that there are holes in our visual field that we fill in by some mechanism. Please make two explanations: the first by memory and the second by imagination.
- 24. We have notes that our visual systems easily outperform computer vision. Can you make a list of perceptual tasks where computers excel?
- 25. What contribution do your outer ears (the 'pinna') perform? How do they inflect sound arriving at the ears? Why don't we put pinna on microphones? How would they change the sound? Please demonstrate.
- 26. what is opponent processing? Can you compare and contrast OP to competition in markets?
- 27. What kind of visual cues do you get from gravity? Can you tell how far away something is by watching it fall?
- 28. What would it be like to see the world upside-down? How long before it turns back up again?
- 29. Why do Baseball outfielders run in arcs when catching a fly ball?
- 30. Your senses depend on educated guesswork to make sense of the world. Can you show one example where the guesswork gives an incorrect conclusion? eg: how might a bush become a bear? Why is this more likely than a bear becoming a bush?







| A٠ | READ: "Unconscious Perception" by Prinz Dec 7 | ø ♦ + |
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