CONSCIOUSNESS: BUDDHIST AND NEUROSCIENTIFIC PERSPECTIVES (L&S 124)

College of Letters and Sciences, Big Ideas Course (3 units)

University of California, Berkeley - Spring Semester 2014

Twenty-five years ago the Dalai Lama suggested that a dialogue between Buddhist practitioners and Western scientists interested in the nature of consciousness and its relationship to the world might lead to new ideas and be of benefit to both the Buddhist and scientific communities. While science and religion are not generally considered to be natural collaborators, the dialogue that ensued quickly gained momentum and catalyzed new strands of research, most notably in the area of the neuroscience of meditation and emotion. Coming from our two disciplinary perspectives (Buddhist studies and neuroscience) we have found ourselves intrigued, excited, and at the same time critical of the Buddhism/science dialogues. We will, in our own way, carry on this dialogue among ourselves, first by laying the necessary groundwork in our respective fields, and then by exploring areas of convergence and divergence around certain themes. The process will include reflection on fundamental epistemological and metaphysical commitments in both traditional Buddhist thought and contemporary biological sciences.

The first half of the semester will present basic concepts and assumptions in the fields of Buddhism and neuroscience as they relate to the study of mind and consciousness. On the Buddhist side this will include lectures on the origins and fundamental tenets of Buddhism, including Buddhist cosmology, soteriology, and metaphysics; Buddhist philosophy of mind, self, and consciousness; and Buddhist meditation theory. On the science side this will include central concepts of contemporary neuroscience, as they have developed within the historical trajectory of Western science, including evolutionary biology, chemistry, and physics; nervous-system structure and function and approaches to linking brain physiology to notions of mind, self, and consciousness; and Western science perspectives on the mind-matter relation more generally. The second half of the semester will explore areas of convergence and divergence, focusing on such themes as: (1) varying accounts of the emergence of self and mind (both evolutionary and phenomenological perspectives), (2) the problem of free will and determinism, (3) the origins of life and the distinction between sentience and insentience, (4) death, and (5) the meaning of life.

Two Required Lectures and one Required Discussion Section meeting each week.

Lecture times: Tuesday and Thursday at 2:00 to 3:30 PM - 3 LeConte Hall

Instructors: David Presti
Department of Molecular and Cell Biology, and Cognitive Sciences Program
249 Life Sciences Addition (LSA)
phone and voicemail: 510-643-2111
<presti@berkeley.edu>

Robert Sharf
Department of East Asian Languages and Cultures, and Group in Buddhist Studies
3121 Dwinelle Hall
phone and voicemail: 510-642-6369
<rsharf@berkeley.edu>

Office hours: David Presti – 249 LSA
Tuesdays: 11:00 to 11:45 AM
Wednesdays: 11:00 to 11:45 AM

Robert Sharf – 3121 Dwinelle
Tuesdays: 3:30 to 5:00 PM

Readings: Required Course Reader at Copy Central (2576 Bancroft Way, just east of Telegraph Avenue). Any additional readings will be posted on the class bSpace site.

Graduate student instructors (GSIs), their email addresses, and office hours:

James Marks	<jamesmarks@berkeley.edu>	Thursdays: 11 to 1 in 3117 Dwinelle
Mark Rutschman-Byler	<markrb@berkeley.edu>	Wednesdays: 12 to 2 in 3117 Dwinelle

The GSIs are here to help you get the most from this class. You are encouraged to get to know and talk with your GSI. Your GSI will see you in weekly Discussion Section and will also be available to meet with you during weekly office hours. Don't be shy!

Discussion section times and locations:

101	Mon	10-11	B56 Hildebrand
102	Mon	11-12	6 Evans
103	Mon	3-4	156 Dwinelle
104	Mon	4-5	255 Dwinelle

Prerequisites: A passion to learn! There are no University course prerequisites for this class.

Attendance at the lectures and in discussion section is required. Lectures are every Tuesday and Thursday, 2:00 to 3:30 PM. While some of the factual content in the course can be learned by reading and obtaining notes from the lectures, attendance is required because we believe there are very important elements of the material that are best, if not exclusively, transmitted through in-person contact. Basically, there is more to learning than memorizing facts, even if memorizing some facts is important. Attendance will be monitored with periodic quizzes during lecture. Any quizzes will be short, consisting of a very small number of questions. They will test material from recent lectures and reading. To be prepared to take the quizzes, stay current with your understanding of lecture and reading material.

Homework will consist of weekly readings and regular short writing assignments. The writing assignments will be one-page essays (1" margins, 10-12 point font, 1.5 to 2 line spacing). In grading the short assignments we are looking for three things, namely (1) clear evidence that you did the assigned reading(s) and are keeping up with lectures; (2) clear evidence that you took time to reflect on the assigned reading(s) and think through your response; (3) the paper, even though it is just a few paragraphs, should be clearly organized and written, free of grammatical mistakes, spelling errors, typos, and so on. Some of the assignments are quite challenging, and we do not expect you to understand everything you read. We only expect you to give it a good try.

The short assignments must be handed in at the start of the lecture on the day they are due. These papers are never accepted late. Should you miss class due to unforeseen, legitimate, and documented circumstances (e.g., a medical emergency), you will be given an alternative makeup paper assignment.

Exams and Quizzes will consist of multiple choice, short-answer, and essay questions, drawing from material in lectures, discussion sections, and required readings.

Midterm Exam: Thursday March 13 during the usual class meeting time, 2:00 to 3:30 in 3 LeConte.

Final Exam: Monday May 12, 11:30 AM to 2:30 PM (Exam Group 2). The final exam covers material from the entire semester of lectures and readings.

We cannot change the dates and times for these exams. Mark your calendars now.
If you are unable to accommodate these exam dates, you should not enroll in the class.
There will be no make-up exams.

Grading: Your grade in this class is based on exam performance (Midterm Exam ~ 15%; Final Exam ~ 25%), quizzes and writing assignments (~50%), discussion section attendance and performance (~10%). Your letter grade in the course will be determined according to absolute standards of performance. This hopefully relates to your acquisition of knowledge and understanding of the material. Importantly, you will not be competing against fellow students in the sense that we do not force letter grades to conform to a predetermined distribution. If everyone does extremely well, everyone could receive an "A" grade. If everyone does poorly (highly unlikely), then everyone could get a low grade. Rather than devoting energy to worrying about where grade cut-offs are, if you are truly interested in this subject and in getting the most from this class, we urge you to study seriously from the beginning, do the readings, and truly make an effort to learn the material. You will be rewarded with deep knowledge and understanding of some really fascinating topics. Good grades will be a natural side effect.

University holidays: no discussion sections or lectures on these days

Monday, February 17 - Presidents Day, remember and honor US Presidents, past and present
Monday, March 24 to Friday, March 28 – Spring Recess

Honor Code: The student community at UC Berkeley has adopted the following Honor Code:
"As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others." The hope and expectation is that you will adhere to this code.

Collaboration and Independence: Reviewing lecture and reading materials and studying for exams can be enjoyable and enriching things to do with fellow students. This is recommended. However, unless otherwise instructed, homework assignments are to be completed independently and materials submitted as homework should be the result of one's own independent work.

Cheating: A good lifetime strategy is always to act in such a way that no one would ever imagine that you would even consider cheating. Anyone caught cheating on a quiz or exam in this course will receive a failing grade in the course and will also be reported to the University Center for Student Conduct. In order to guarantee that you are not suspected of cheating, please keep your eyes on your own materials and do not converse with others during the quizzes and exams.

Plagiarism: Your homework essays must be original writing composed by you. To copy text or ideas from another source without appropriate reference is plagiarism and will result in a failing grade for your assignment and usually further disciplinary action. For additional information on plagiarism and how to avoid it, see: http://gsi.berkeley.edu/teachingguide/misconduct/prevent-plag.html

Academic Integrity and Ethics: Cheating on exams and plagiarism are two common examples of dishonest, unethical behavior. Honesty and integrity are of great importance in all facets of life. They help to build a sense of self-confidence, and are key to building trust within relationships, whether personal or professional. There is no tolerance for dishonesty in the academic world, for it undermines what we are dedicated to doing – furthering knowledge for the benefit of humanity.

Your experience as a student at UC Berkeley is hopefully fueled by passion for learning and replete with fulfilling activities. And we also appreciate that being a student can be stressful. There may be times when there is temptation to engage in some kind of cheating in order to improve a grade or otherwise advance your career. This could be as blatant as having someone else sit for you in an exam, or submitting a written assignment that has been copied from another source. And it could be as subtle as glancing at a fellow student's exam when you are unsure of an answer to a question and are looking for some confirmation. One might do any of these things and potentially not get caught. However, if you cheat, no matter how much you may have learned in this class, you have failed to learn perhaps the most important lesson of all.

Communication and E-mails: We like teaching this class! The material is fascinating and, we believe, useful and important stuff to know. We enjoy being available during office hours and after lectures to answer questions and further discuss the material. We greatly prefer in-person contact to email. Toward this end, we hold office hours several days a week and are generally available following lectures for brief questions and discussion. Questions of importance or ones that require detailed answers must be addressed in person. Always make sure to see us in person about any important matter. It will never be an acceptable excuse to say something like: "Well, I sent you an email and never heard back." As stated: Always make sure to see us in person about any important matter. E-mail is a wonderful tool and very convenient. However, it is not a substitute for direct personal contact, especially when such contact is easy, as it is with us.

Thanks again for your interest in this subject. We truly hope you have a very enjoyable and fulfilling experience in this class this semester!

Timeline of Topics and Readings (tentative: subject to revision; several assignments still to be added):

Reading numbers refer to the list of readings as numbered in the "Table of Contents" in the Course Reader (Pages 11-13 in Volume One, or pages 5-7 in Volume Two). In the Course Reader, the readings are listed and printed in alphabetical order according to the name of the first author.

Week 1: Introduction to the Course, Science, and Buddhism

Jan 21 Course logistics; What is Science?
Reading: 25 (Kuhn)

Jan 23 What is Buddhism?
Reading: 13 (Gethin, Introduction and Chapter 1)

Assignment (due Thursday Jan 23 at beginning of lecture): Kuhn's article raises the issue of discovery versus what we might call "construction": to what extent is science driven by new discoveries about the world, versus new ways of thinking about and understanding the world? (You might think of it this way: "discovery" implies that what is found preexists its discovery; "construction," in contrast, is something that may be useful, but is, in the end, created by the human mind.) Does the traditional account of the Buddha's life, as presented in Gethin Chapter 1, depict him as "discovering" something about the world, or rather constructing or creating a better way to understand the world?

Week 2: The Basics

Jan 28 Trajectory of Contemporary Science; What is Life?
Readings: 49 (Watson & Crick), 50 (Watson & Crick)

Jan 30 Early Buddhist Doctrine: Three Marks: Suffering, Impermanence, Nonself
Reading: 13 (Gethin, Chapters 2 and 3)

Assignment (due Tuesday Jan 28 at beginning of lecture): Everyone knows what it means to be alive. Yes? Reflect on the nature of life and write two clear and succinct paragraphs, each paragraph describing a viable "scientific" answer (or hypothesis) addressing the question "what is life?"

Week 3: Maps

Feb 4 Structure and Function of the Human Nervous System
Reading: 36 (Presti)

Feb 6 Buddhist Cosmology: Samsara, Karma, Rebirth, Nirvana
Reading: 13 (Gethin, Chapters 5 and 6)

Assignment (due Thursday Feb 6 at beginning of lecture): (TBA)

Week 4: Mind Science

Feb 11 Life and Mind
Readings: 32 (Pollan), 35 (Presti)

Feb 13 Early Meditation Theory
Readings: 7 (Buddhaghosa), 14 (Gethin), 52 (Young)

Assignment (due Tuesday Feb 11 at beginning of lecture): on mind and life (TBA)

Week 5: Reformations

Feb 18 Contemporary Ideas on a Neuroscience of Consciousness
Readings: 8 (Crick & Koch), 23 (Koch & Tononi), 37 (Raichle)

Feb 20 Madhyamika and Emptiness
Readings: 9 (Dennett), 11 (Garfield), 21 (Heart Sutra)

Assignment (due Thursday Feb 20 at beginning of lecture): on Madhyamika (TBA)

Week 6: Intentionality

Feb 25 Contemporary Ideas on a Neuroscience of Consciousness, Continued
Readings: 19 (Hameroff), 28 (Mashour & Alkire)

Feb 27 Later Buddhist Models of Cognition: Yogacara and Self-awareness
Reading: 48 (Waldron)

Assignment (due Tuesday Feb 25 at beginning of lecture): on consciousness neurobiology (TBA)

Week 7: Mysticism and Religious Experience

March 4 Psychedelics and Mystical Experience
Readings: 17 (Griffiths & Grob), 18 (Griffiths et al.), 33 (Presti), 34 (Presti)

March 6 Religion and the Mysticism Debates: Constructivists Versus Perennialists
Readings: 16 (Griffiths), 41 (Smith)

Assignment (due Thursday March 6 at beginning of lecture): on Smith (TBA)

Week 8: Midterm Exam

March 11 Exam review

March 13 Midterm Exam

Week 9: Religion and Modernity

March 18 Talk by Jeff Kripal, visiting from Rice University Department of Religious Studies
Reading: 24 (Kripal)

March 20 Spiritual But Not Religious
Reading: 39 (Sharf)

Spring Recess

Week 10: No Mind and Mind

April 1 No Mind
Readings: 1 (App), 10 (Dunne)

April 3 Neuroscience and Meditation Research
Readings: 26 (Ludwig & Kabat-Zinn), 27 (Lutz et al.), 42 (Tang et al.), 43 (Tang et al.)

Week 11: Me, Myself, and I

April 8 Neurology and the Self
Readings: 12 (Gazzaniga), 38 (Ramachandran & Blakeslee)

April 10 Who am I?
Readings: 20 (Harding), 31 (Nagel)

Assignment What would Nagel make of Harding's "discovery"?

Week 12: Who is Minding the Store?

April 15 What is Free Will?
Readings: 22 (Koch), 51 (Wegner & Wheatley)

April 17 Play and Ritual Theory
Readings: 3 (Bateson), 47 (Vygotsky)

Week 13: Embodied Cognition

April 22 Neurology of Body Perception and Out-of-Body Experiences
Readings: 2 (Arzy et al.), 4 (Blakeslee), 5 (Blanke et al.), 15 (Greyson), 29 (Mobbs & Watt)

April 24 Embodied Cognition, Enactive Cognition, Extended Cognition
guest lecture (Thompson or Metzinger)
Readings: 45 (Varela & Depraz), 46 (Varela, Thompson, Rosch)

Week 14: Wrap Up

April 29 What's Left Out: Expanding the Dialogue
Readings: 6 (Borjigin et al.), 44 (Tucker)

May 1 Are Buddhas Zombies?
Reading: 40 (Siderits)