May 8, 2012

To: Scott Chandler, Chair
General Education Governance Committee

Michael Meranze, Chair
College Faculty Executive Committee

From: Ellen Carpenter, Co-Chair
Undergraduate Council Curriculum Committee

Russell Schuh, Co-Chair
Undergraduate Council Curriculum Committee

Re: Recommendation for GE Approval – General Education Cluster 73ABCW

On behalf of the Undergraduate Council, we have reviewed the recommendation from the General Education Governance Committee as approved by the College Faculty Executive Committee on April 30, 2012. We are pleased to inform you that the recommendation for the General Education Cluster 73ABCW Mind Over Matter: The History, Science, and Philosophy of the Brain to satisfy the UCLA General Education requirements has been approved, with an effective date of Fall 2012.

If you have any questions or need additional information, please contact Academic Senate Principal Policy Analyst Melissa Spagnuolo (x51194; mspagnuolo@senate.ucla.edu).

cc: Lucy Blackmar, Assistant Vice Provost, Undergraduate Education Initiatives
Kathleen Copenhaver, Associate Registrar, Registrar's Office
Leann Hennig, Senior Editor, Registrar's Office
M. Gregory Kendrick, Director, Freshman Cluster Program
Melissa Spagnuolo, Principal Policy Analyst, Academic Senate
Richard Weiss, Chair, Undergraduate Council

Attachment: College FEC Approval Memo of April 30, 2012

UCLA MEMORANDUM

College Faculty Executive Committee
A265 Murphy Hall

April 30, 2012

To: Russell Schuh, Co-Chair
UCLA Curriculum Committee

Ellen Carpenter, Co-Chair
UCLA Curriculum Committee

From: Michael Meranze, Chair Michael Meranze
UCLA College Faculty Executive Committee

Re: Recommendations from General Education Governance Committee (submitted April 27, 2012);
Effective date: Fall 2012
Final Approval terminates with the Undergraduate Council

On behalf of the College Faculty Executive Committee (FEC), I have reviewed the recommendation from the GE Governance committee. Acting on behalf of the College FEC, I am pleased to inform you that the FEC has approved the committee's recommendation. The effective date of the College FEC approval is Fall 2012.

Summary of recommendations approved by FEC:

- One course from the General Education Freshman Cluster Program (Fall 2012)

You are welcome to contact me at meranze@history.ucla.edu with questions. Kyle Stewart McJunkin, Academic Administrator, is also available to assist you and he can be reached at (310) 825-3223 or kmcjunkin@college.ucla.edu.

cc: Melissa Spagnuolo, Principal Policy Analyst, Academic Senate
Lucy Blackmar, Assistant Vice Provost, Undergraduate Education Initiatives
M. Gregory Kendrick, Director, Freshman Cluster Program
Kathleen Copenhaver, Associate Registrar, Registrar's Office
Leann Hennig, Senior Editor, Registrar's Office
Richard L. Weiss, Chair, Undergraduate Council
Scott Chandler, Chair, GE Governance Committee

Attachment: Recommendation from GE Governance committee

UCLA MEMORANDUM

General Education
A265 Murphy Hall
157101

April 27, 2012

TO: Michael Meranze, Chair
College Faculty Executive Committee

FROM: Scott Chandler, Chair
General Education Governance Committee

RE: Recommendations for GE Credit Approval

After careful analysis of submitted course materials, the General Education Governance Committee recommends that the following course be approved for GE credit. In order for these courses to be listed in the Schedule of Classes for Fall 2012, both the College FEC and the Undergraduate Council Curriculum Committee must ratify the GE Governance Committee's recommendations and notify the Registrar's Office via e-mail as soon as possible.

General Education Cluster 73ABCW

Mind over Matter: The History, Science, and Philosophy of the Brain
Scott Chandler, Professor
Units: 6 each
Effective Date: Fall 2012

GE Governance Committee Recommendation:
Foundations of Arts and Humanities – Philosophic and Linguistic Analysis; Foundations of Society and Culture – Historical Analysis; Foundations of Scientific Inquiry – Two (2) Life Science

Cc: Kyle McJunkin

Enclosed: Proposal

General Education Course Information Sheet

Please submit this sheet for each proposed course

Department & Course Number	GE Cluster 73ABCW
Course Title	Mind over Matter: The history, science and philosophy of the brain.
Indicate if Seminar and/or Writing II course	Cluster course: F/W/Spring seminar

1 Check the recommended GE foundation area(s) and subgroups(s) for this course

Foundations of the Arts and Humanities	
• Literary and Cultural Analysis	
• Philosophic and Linguistic Analysis	1
• Visual and Performance Arts Analysis and Practice	
Foundations of Society and Culture	
• Historical Analysis	1
• Social Analysis	
Foundations of Scientific Inquiry	
• Physical Science	
With Laboratory or Demonstration Component must be 5 units (or more)	
• Life Science	2
With Laboratory or Demonstration Component must be 5 units (or more)	

2. Briefly describe the rationale for assignment to foundation area(s) and subgroup(s) chosen.

This course is multidisciplinary with faculty from the philosophy, history, psychology, psychiatry and integrative biology and physiology departments. We will approach each module from an interdisciplinary perspective.

3. "List faculty member(s) who will serve as instructor (give academic rank):
Scott Chandler, Professor; Michael Levine, Professor; Barbara Knowlton, Professor; Marcia Meldrum, Associate Researcher; Sam Cumming, Assistant Professor.

Do you intend to use graduate student instructors (TAs) in this course? Yes x No ____

If yes, please indicate the number of TAs 3

4. Indicate when do you anticipate teaching this course over the next three years:

2010-2011	Fall		Winter		Spring	
	Enrollment		Enrollment		Enrollment	
2011-2012	Fall		Winter		Spring	
	Enrollment		Enrollment		Enrollment	
2012-2013	Fall	x	Winter	x	Spring	x
	Enrollment	120	Enrollment	120	Enrollment	100

5. GE Course Units

Is this an ***existing*** course that has been modified for inclusion in the new GE? Yes ____ No x

If yes, provide a brief explanation of what has changed. ____

Present Number of Units: _____ Proposed Number of Units: _____

6. Please present concise arguments for the GE principles applicable to this course.

❑ General Knowledge	We introduce topics on neuroscience from cellular physiology of neurons to behavior. We integrate historical and philosophical foundations of our knowledge of the nervous system with basic biological principles.
❑ Integrative Learning	This course is multidisciplinary with faculty lecturing from scientific, historical, psychological and philosophical perspectives.
❑ Ethical Implications	Neuroscience is a rapidly expanding field with the advent of molecular biological techniques and neuro imaging methods. We can now probe into one's brain, record electrical activity, and image what someone is thinking. What are the ethical implications of this? How far can such human experimentation extend? The topic of neuroethics will be an underlying presence throughout this year long course.
❑ Cultural Diversity	Nothing specifically
❑ Critical Thinking	Students are constantly challenged to think critically about how scientists evaluate data and come to logical conclusions from their data.
❑ Rhetorical Effectiveness	Students will have written and oral presentations on topics that force them to integrate multidisciplinary fields that converge on neuroscience.
❑ Problem-solving	Although there is no explicit mathematical problem solving, students will be introduced to the scientific method and will see how scientist solve novel problems in science. In some instances, students will be asked to design experiments to address a particular problem, and, based on the hypothetical data, present their solutions orally or in writing.
❑ Library & Information Literacy	Students will be asked to give oral and written presentations on topics that will require them to use a multifaceted approach to research. The library and internet databases will be used.

(A) STUDENT CONTACT PER WEEK (if not applicable write N/A)

1.	Lecture:	**2.5**	(hours)
2.	Discussion Section:	**2**	(hours)
3.	Labs:		(hours)
4.	Experiential (service learning, internships, other):		(hours)
5.	Field Trips:		(hours)

(A) TOTAL Student Contact Per Week **4.5** **(HOURS)**

(B) OUT-OF-CLASS HOURS PER WEEK (if not applicable write N/A)

1.	General Review & Preparation:	**2.5**	(hours)
2.	Reading	**3**	(hours)
3.	Group Projects:	**1(amoratized)**	(hours)
4.	Preparation for Quizzes & Exams:	**2**	(hours)
5.	Information Literacy Exercises:	**1**	(hours)
6.	Written Assignments:	**2**	(hours)

7. Research Activity:	**2** (hours)	
(B) TOTAL Out-of-class time per week	**13.5**	**(HOURS)**
	13.5	
GRAND TOTAL (A) + (B) must equal at least 15 hours/week	18	**(HOURS)**

PROPOSED WRITING II COURSE INFORMATION SHEET

Please submit this information sheet along with the course syllabus and course request form through the Course Inventory Management System (CIMS).

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1. Title of course proposed to fulfill the Writing II requirement:
   Mind over Matter: The history, science and philosophy of the Brain

2. What faculty member(s) will serve as instructor(s):
   Scott Chandler, Professor; Michael Levine, Professor; Barbara Knowlton, Professor; Marcia Meldrum, Associate Researcher; Sam Cumming, Assistant Professor

3. a). Is this course currently being taught? Yes _____ No **xxx**

   If yes: Number of units: _____

   Quarter(s) offered: _____

   b). What is the current enrollment? _____

   c). What is the projected enrollment for your proposed course? **120 students**

   d). Does the course currently use TAs: Yes _____ No _____

   If yes: Number of TAs: _____

   e). How many TAs will your department support for your proposed course (each TA will handle one writing section of twenty students)? **None, cluster office will pay for 3 TAs**

   f). How many additional TA's will you request from the College for your proposed course (each TA will handle one writing section of twenty students and should not exceed the number of TAs supported by the department)? **See above**

   g). Do you intend to discontinue the existing version of this course (without the writing component)? Yes _____ No _____

4. When would you anticipate teaching this course over the next two years:

   2012-2013: Fall xxx Winter xxx Spring xxx

   2013-2014: Fall xxx Winter xxx Spring xxx

   Unsure: _____

5. Do you intend to offer this proposed course on an on-going basis? Yes xx No _____

   If yes: How many times per academic year: cluster course, yearly

Please contact Myrna Dee F. Castillo (Tel: x4-5040: E-mail: mcastillo@college.ucla.edu) for further information about this form and the approval process.

CLUSTER COURSE PROPOSAL

Title: Mind over Matter: The history, science, and philosophy of the brain

Faculty: Prof. Scott H. Chandler (Integrative Biology and Physiology, Cluster Coordinator); Prof. Sam Cumming (Philosophy); Prof. Michael Levine (Psychiatry and Biobehavioral Science); Prof. Barbara Knowlton (Psychology); Marcia Meldrum, Associate Researcher, Center for Health Services and Society.

Course Description and Aims

The human brain is the most complex structure in the universe and the last major organ system to be understood. Our brains give us the power to see and hear, learn and remember, interpret others, and act purposefully in our environment. Yet, we can lose these abilities that we take for granted, naturally over time or as a result of injury or disease. This cluster course looks at brain function from the historical, biological, psychological, and philosophical perspectives to enable students to better understand the organ responsible for all our mental processes and behavior in health and disease. A goal of the course is to encourage students to think and write critically about the interaction of neurobiological, philosophical and psychological factors that control our behavior and experiences as human beings. Importantly, this is placed within a historical perspective to better understand how the field of neuroscience and our study of the brain have emerged over time.

Course Organization

This will be a 3 quarter course. In Fall and Winter we will give lectures to the entire class on varied topics in neuroscience from historical, philosophical and physiological perspectives. Fall quarter will focus on the basic structure of the brain, the basis of neuronal excitability, the mind and consciousness, artificial intelligence, and perception. The winter quarter will focus on sensory-motor integration, neuromotor disorders, learning and memory, and mental health disorders. For both quarters a strong historical perspective on each topic will be discussed. Spring quarter seminars, designed by faculty and graduate student instructors (GSIs), will be taught that cover more specific topics such as the following:

"*Diagnosing Difference: Historical, Biological, and Philosophical Perspectives on Mental Illness*." The emphasis of this course would be on neuro-diversity and competing arguments from biologists, philosophers and anthropologists. We will encourage students to think critically and, hopefully, vehemently debate issues of diagnosis, labeling, as well as deinstitutionalization and the anti-psychiatry movement of the 60s and 70s.

"*Neuroscience in Popular Culture. How do neuroscientific discoveries (and mysteries) impact the lives of non-scientists?"* With a solid foundation in scientific papers and review articles, students will analyze a variety of movie and television portrayals of topics such as anterograde and retrograde amnesia, schizophrenia, autism, obsessive compulsive disorder, dreaming, personality permanence, the untapped potential of the human mind, and being a neuroscientist. Students will discuss the portrayal of these topics in the media with regard to their factuality, as well as their illustration of how individuals cope with mental illness, how scientists can better

communicate the relevance of their findings, and how the public integrates science with popular culture.

"How We Decide: The Neuroscience of Decision-Making." Every day, we are faced with hundreds of decisions, both large and small. From choosing what to eat for breakfast to making big life choices about what to study, who to date or where to live, our brains are constantly processing information that drives these choices. In this seminar, we will look at the latest neuroscience research behind what is going on "behind the scenes" in your brain during decision-making; the neural mechanisms that influence our decisions without our awareness; how preferences and social factors can impact our brains; and what happens to our decisions if our brains become damaged.

Assignments, Examinations and Grading:

2 short papers (6 pages each)	150 points
Best 3 grades on 4 quizzes	90 points
Midterm Exam	100 points
Presentations	30 points
Final Exam	150 points

Grading is based upon a 70 (C),80 (B), 90 (A)% scale that may be adjusted lower.

Examinations and quiz formats will combine short answers and objective type questions (True/False, multiple choice, etc).

Writing II

Writing is an integral part of this course, and students will spend a large amount of time in sections working on writing projects. This work will include drafts and revisions, and students will receive extensive evaluation from their graduate student instructors, as well as guidance and comments from fellow students in the class. Through the continual process of writing, revision and discussion, students will hopefully learn how to become better writers by assessing the effectiveness of their written work, and evaluating its focus, organization, content, and expression. Examples of the different types of writing assignments that are being contemplated by the instructional team are as follows (the reader is asked to bear in mind that this part of the cluster is still in the planning stage).

> **Neglect Disorder*:*** For this assignment, write a short (2-3 page) story of the experiences of one day from the perspective of someone with hemispatial neglect disorder. The experiences during this day need not be based on any specific experiences discussed in lecture, but should be informed by your own understanding of the disorder and what it might be like to experience it firsthand, including difficulties and frustrations encountered and any coping mechanisms used.
>
> **Memory Loss**: For this assignment, write a short letter (1-2 pages) from the perspective of a doctor writing to an individual whose close friend or family member has just been diagnosed with Alzheimer's Disease. In the letter, be sure to outline possible ways the individual can help his or her friend to cope with the disorder, as well as the options they have for possible

new treatments, therapy, and ways to find more information or support groups for the disorder. A revision for this paper might be to write a letter to the doctor from the perspective of the friend who has questions about the diagnosis and expectations for the long-term prognosis of the patient.

Argument Essay. Many of the topics discussed in lecture open up areas for debate and discussion. Students will select a topic from a list of statements (e.g. "A computer program possesses intelligence if it is capable of passing the Turing Test." "Autism should be accepted as a variation in functioning rather than a disorder to be cured.") and will write an essay arguing for or against that statement, using relevant materials from class to support their assertions. For the next assignment, students will be asked to write another essay arguing the opposite side, and to attempt to be as convincing as they were in the first essay. Finally, students will be asked to write a brief personal response to the two assignments, discussing what their opinions were when beginning to write and how considering both sides of the issue affected their views. Essays will be graded based on the use of references to relevant course readings and materials, the clarity with which the argument is structured, and adherence to appropriate style guidelines (e.g. proper citations). Personal reflections will be graded for completeness.

Popular press critique. Students will select an article from a major news source (e.g. New York Times, CNN.com, Time Magazine) that discusses a recent finding in the field of neuroscience. Students (with help from their GSI if needed) will use academic resources such as Google Scholar or PsychInfo to access the original peer-reviewed journal article where the research was first published, and will thoroughly read that article. Students will compare the two articles and will write a paper discussing the following:

1) What was the major finding of the research article? What makes it important and different from other studies that already exist? Why is this finding relevant to the people reading the news?
2) What did the news article do well when summarizing the original journal article? Think about audience, technical language, level of detail, etc. Were there things that the news article did better than the journal article?
3) What did the news article do poorly? Are there important details that were discussed in the journal article that didn't get discussed in the news article? Does the news article make different claims about the research than the journal article does?
4) What would you change to write a better news article about the study? Show some examples.

General Education Course Credit: Our team will introduce students to the human brain through an interdisciplinary approach that will familiarize them with not only the biology of the brain and nervous system in health and disease, but also the historical context within which our knowledge about this organ has developed, how society had treated those with physical and mental disorders over time, as well as the ongoing philosophical debates surrounding human consciousness and cognition. At the end of the cluster sequence, students will receive the following GE credit: 1 course in the Foundations of Arts and Humanities (Philosophical and Linguistic Analysis); 1 course in the Foundations of Society and Culture (Historical Analysis); and 2 courses in the Foundations of Scientific Inquiry (Life Science without lab/demonstration).

Syllabus
GE Cluster 73A

Mind over Matter: The history, science and philosophy of the brain

9-10:15 Tuesdays and Thursdays, Kinsey pavilion 1220b

FALL QUARTER 2012

Course Website: xxxx xxxxx xxxxxx

Faculty: Prof. Scott H. Chandler (Integrative Biology and Physiology, Cluster Coordinator (schandler@physci.ucla.edu)
Office Hours: TBA, 2024 Terasaki Life Science Bld.

Prof. Sam Cumming (Philosophy, (sam.cumming@gmail.com)
Office Hours: TBA, xxxxxxx.

Prof. Michael Levine (Psychiatry and Biobehavioral Science (mlevine@mednet.ucla.edu)
Office Hours: TBA, xxxxxxxx.

Prof. Barbara Knowlton (Psychology, (knowlton@psych.ucla.edu)
Office Hours: TBA, xxxxxxxx.

Prof. Marcia Meldrum (mlynnmel@gmail.com (schandler@physci.ucla.edu)
Office Hours: TBA,xxxxxx.

Teaching Fellows: Sarah Hersman (shersman@ucla.edu) Neuroscience IDP
Office Hours: TBA, see course website

Emily Barkley-Levenson (ebarkley@ucla.edu). Psychology Dept.
Office Hours: TBA, see course website

Christine Tarleton (Christine.tarleton@gmail.com) History Dept.
Office Hours: TBA, see course website

Office hours for all faculty and Teaching fellows can be found on our course website.

Holidays: Veteran's Day Monday Nov 12, Thanksgiving Thr/Fri Nov 22/23

Discussion sections: All are on Fridays and are required. Each student is assigned to a Discussion section that meets for 2 hours per week, and attendance is mandatory. You are only allowed to go to your assigned section, and there are NO exceptions to

this. There will be weekly activities and assignments associated with the material taught in lecture. There will be 4 quizzes and your lowest score will be dropped.

Discussion section locations and times: TBA

Section 1
Section 2
Section 3
Section 4
Section 5
Section 6

Course Statement

The human brain is the most complex structure in the universe and the last major organ system to be understood. Our brains give us the power to see and hear, learn and remember, interpret others, and act purposefully in our environment. Yet, we can lose these abilities that we take for granted, naturally over time or as a result of injury or disease. This cluster course looks at brain function from the historical, biological, psychological, and philosophical perspectives to enable students to better understand the organ responsible for all our mental processes and behavior in health and disease.

A goal of the course is to encourage students to think and write critically about the interaction of neurobiological, philosophical and psychological factors that control our behavior and experiences as human beings. Importantly, this is placed within a historical perspective to better understand how the field of neuroscience and our study of the brain has emerged over time. We will address a number of questions, such as:

- What methods and approaches have scientists and physicians used to try to understand the workings of the brain?
- How has our understanding of how the brain works evolved?
- Is the nervous system organized into discrete modules?
- What is the biological basis for communication between neurons?
- How does the nervous system take information from the physical world and transform it into our sensory experience?
- How does the brain store our experiences as memories?
- Can the brain be viewed as a complex computer?
- Is the brain hard-wired to produce movements
- Can the brain exhibit plasticity after injury?
- Is our subjective experience (consciousness) a physical phenomenon?

- Is your subjective experience the same as my subjective experience?
- Are we rational?
- How has society looked upon and treated those with mental disorders?

GE course Credits: This class fulfills the following GE requirements:

2 Life science without lab, 1 Society and Culture, and 1 Arts and Humanities

Writing II Credit and GE Cluster courses

This course fulfills the Writing II requirement for the university. **To receive Writing II credit you must complete all 3 quarters of the course.** Writing is an integral part of this course, and you will spend a large amount of your time in sections working on your writing projects. This work will include drafts and revisions, and you will receive extensive evaluation from your graduate student instructors, as well as guidance and comments from fellow students in the class. Through the continual process of writing, revision and discussion, you will hopefully learn how to become better writers by assessing the effectiveness of your written work, and evaluating its focus, organization, content, and expression.

Please note that you must complete English Comp 3 (Writing I or equivalent) by the end of your first year in order to receive Writing II credit through the cluster. You are strongly encouraged to complete English Comp 3 prior to the spring quarter since the spring course instructors will expect that you have prior college level writing experience and from a practical standpoint, it English Comp 3 course space is very limited in Spring quarter.

Evaluation

2 short papers (6 pages each)	150 points
Best 3 grades on 4 quizzes	90 points
Midterm Exam	100 points
Presentations	30
Final Exam	150 points

Grading is based upon a 70 (C),80 (B), 90 (A)% scale that may be adjusted lower.

Examinations and quiz formats will combine short answers and objective type questions (True/False, multiple choice, etc).

Policy on make-up exams: make-up exams are possible only in dire and documented circumstances (ie, illness), and only if the instructor is notified in advance.

Policy on late assignments: 50% grade reduction if turned in within 1 week after due date.

Class Rules

1. In discussion section and lecture hall **ALL cell phones must be OFF**. It is very distracting to instructors to either hear phones ringing or see students looking at their phones or texting messages. Leaving the class to answer phone messages or to text **is not appropriate** and distracting.

2. Students may use laptops in class **only for taking notes**. If you are found doing other things in class on the laptop you will be asked to stop. That will be embarrassing to you and will be brought to the instructor's attention. Such inappropriate behavior is distracting to instructors and students around you. We want you to do well in this course and any distractions to your instructors, other students and YOU are not appropriate.

Weekly Readings

All readings can be found on the class web site. You are responsible for all material posted on our web site and that includes corrections, changes, additions to what we publish the first day of class.

TEXTBOOK: Brain, Mind, and Behavior. 3rd ed. Bloom, F., Nelson C., and Lazerson A. 2005.

Additional assigned readings from magazine, journals, book chapters for each module.

Accommodations for Students with Disabilities

You may request accommodations due to disability by contacting the Office for Students with Disabilities located in A255 Murphy Hall, (310) 825-1501. **WEB link:www.osd.ucla.edu**

FALL QUARTER

I. Introduction and Historical perspective (overview)

Lect 1 (Sept. 27): Introduction and overview of course: (*Group*)

How Philosophers became Scientists (*Meldrum*)

Lect 2 (Oct 2): The Problem: How to apply the Scientific Method to the Nervous System?(*Meldrum*)

Readings: Excerpts from Francis Bacon, *Novum Organum* (1620), and Adrian, Edgar D. and Zotterman, Yngve, The impulses produced by sensory nerve endings (1926); Greenblatt, Samuel H. The development of modern neurological thinking in the 1860s. *Perspectives in Biology and Medicine*, 1991, **35**: 129-139; Young, Robert M. The functions of the brain: Gall to Ferrier (1808-1886). *Isis*, 1968, **59**: 251-268.

II. Fundamental Principles of Neuronal Organization and Communication

Lect 3 (Oct. 4) The Organization of the Brain (vocabulary for neuroanatomy)(*Levine*)
Lect 4 (Oct. 9) Continued

***Readings*:** Bloom, Nelson, Lazerson and Annenberg (BNLA), *Brain, mind, and behavior, 2005, 3rd ed. Pg 1-27.*

Lect 5 (Oct. 11) Regulation of neuronal activity: the Resting Neuron (Chandler)
Lect 6 (Oct. 16) Communication *within* neurons: Electrical activity and the Nerve impulse

Readings: BNLA pgs 29-37.

Lect 7 (Oct. 18) Communication *between* neurons: How neurons speak to each other
Lect 8 (Oct. 23) Communication between neurons: Neurotransmitters and synaptic transmission

Readings: BNLA pgs 37-50.

Lect 9 (Oct. 25): Exam 1

III. The Mind and Consciousness

Lect 10 (Oct. 30) Historical perspective on the mind and consciousness (*Meldrum*)

Readings*:* Excerpts from Locke, John, *Essay Concerning Human Understanding, Book 1* (1690) and from Schaffer, Simon. Enlightened Automata, in Clark et al. (eds), *The Sciences in Enlightened Europe*, Chicago and London:

University of Chicago Press, 1999; Franz, Shepherd Ivory, Cerebral-mental relations. *Psychological Review,* 1921; 28: 81-95.

Lect 11 (Nov. 1) The Mind-Body problem (*Cumming*)

Readings: Descartes, selections from *Meditations I,II,IV,* pp.12-23, 37-43 (in the Cambridge ed.). Dennett, *Explaining Consciousness,* Ch.2, pp. 21-42.

Artificial Intelligence: Understanding the mind as a computer

Lect 12 (Nov. 6) Alan Turing and the computer (Cumming)
Lect 13 (Nov. 8) Turing's test and A.I.

Readings: Hillis, *The Pattern on the Stone,* Chs. 1-2, pp. 1-38. Turing test, Turing, "Computing Machinery and Intelligence," Mind, New Series, Vol. 59, No. 236. (Oct., 1950), pp. 433-460.

Consciousness: Our window on the world?

Lect 14 (Nov. 13) The philosophical puzzle of consciousness (Cumming)
Lect 15 (Nov. 15) The contents of experience and perceptual explanation

Readings: Dennett, *Explaining Consciousness,* selections from Chs.5&12, pp. 101-126, 389-398. Helmholz, "Concerning the Perceptions in General" in *Visual Perception: Essential Readings,* Yantis, ed., pp. 21-44.

The Biological basis of Perception: How we sense the world

Lect 16 (Nov. 20) Transduction processes in various systems (*Knowlton*)

NOV 22: HOLIDAY THANKSGIVING

Lect 17 (Nov. 27) Continued
Lect 18 (Nov. 29) Visual Perception: the role of the visual system
Lect 19 (Dec. 4): Disorders in perception of the world: Agnosias

Readings: Kalat, J. (2004) Biological Psychology, 8th Edition. Chapter 6, Vision. pp143-183. Purves, D., Lotto, R.B., & Nundy, S. (2002) Why we see what we do. American Scientist, 90, 236-242. Oliver Sacks (1993). To see and not see: A neurologist's notebook. The New Yorker, May 10. pp 59-73. Oliver Sacks (1985) The Man who Mistook his Wife for a Hat. Title essay pp 8-22.

Lec 20 (Dec. 6): Pain: A more terrible lord than death. *Meldrum*

Readings*:* Gawande, Atul. The Pain Perplex, pp. 115-129 in *Complications: A Surgeon's Notes on an Imperfect Science,* New York: Picador, 2002*;*

Beecher, Henry K., Pain in men wounded in battle. *Annals of Surgery* 1946; 123: 96-105; Melzack, Ronald, and Wall, Patrick D., Pain mechanisms: A new theory. *Science* 1965; 150: 971-979; Dubner, Ronald and Ruda, MA. Activity-dependent neuronal plasticity following tissue injury and inflammation. *Trends in Neurosciences* 1992; 15: 96-103.

FINAL EXAM **TBA**

Syllabus
GE Cluster 73B

Mind over Matter: The History, Science and Philosophy of the Brain

9-10:15 Tuesdays and Thursdays, Kinsey Pavillion 1220B

WINTER QUARTER 2013

Course Website: xxxx xxxxx xxxxxx

Faculty: Prof. Scott H. Chandler (Integrative Biology and Physiology, Cluster Coordinator (schandler@physci.ucla.edu)
Office Hours: TBA, 2024 Terasaki Life Science Bld.

Prof. Sam Cumming (Philosophy, (sam.cumming@gmail.com)
Office Hours: TBA, xxxxxxx.

Prof. Michael Levine (Psychiatry and Biobehavioral Science (mlevine@mednet.ucla.edu)
Office Hours: TBA, xxxxxxxx.

Prof. Barbara Knowlton (Psychology, (knowlton@psych.ucla.edu)
Office Hours: TBA, xxxxxxxx.

Prof. Marcia Meldrum (mlynnmel@gmail.com (schandler@physci.ucla.edu)
Office Hours: TBA,xxxxxx.

Teaching Fellows: Sarah Hersman (shersman@ucla.edu) Neuroscience IDP
Office Hours: TBA, see course website

Emily Barkley-Levenson (ebarkley@ucla.edu). Psychology Dept.
Office Hours: TBA, see course website

Christine Tarleton (Christine.tarleton@gmail.com) History Dept.
Office Hours: TBA, see course website

Office hours for all faculty and Teaching fellows can be found on our course website.

Holidays: Martin Luther King, Monday Jan. 21, President's Day Monday Feb. 18

Discussion sections: All are on Fridays and are required. Each student is assigned to a Discussion section that meets for 2 hours per week, and attendance is mandatory. You are only allowed to go to your assigned section, and there are NO exceptions to this. There will be weekly activities and assignments

associated with the material taught in lecture. There will be 4 quizzes and your lowest score will be dropped.

Location and Times: TBA

Section 1 xxxxxxxxxxxxxxxxxxxx
Section 2 xxxxxxxxxxxxxxxxxxxx
Section 3 xxxxxxxxxxxxxxxxxxxx
Section 4 xxxxxxxxxxxxxxxxxxxx
Section 5 xxxxxxxxxxxxxxxxxxxx
Section 6 xxxxxxxxxxxxxxxxxxxx

Course Statement

The human brain is the most complex structure in the universe and the last major organ system to be understood. Our brains give us the power to see and hear, learn and remember, interpret others, and act purposefully in our environment. Yet, we can lose these abilities that we take for granted, naturally over time or as a result of injury or disease. This cluster course looks at brain function from the historical, biological, psychological, and philosophical perspectives to enable students to better understand the organ responsible for all our mental processes and behavior in health and disease.

During the winter quarter, we will address a series of questions through lecture and discussion sections such as:

- Is the nervous system organized into discrete modules for control of movement?
- Is the brain hard-wired to produce movements
- How does the brain store our experiences as memories?
- Can we optimize learning?
- Can the brain exhibit plasticity after injury?
- Are we rational?
- How has society looked upon and treated those with mental disorders?

GE course Credits: This year long course fulfills the following GE requirements:

2 Life science without lab, 1 Society and Culture, and 1 Arts and Humanitie

Writing II Credit and GE Cluster courses

This course fulfills the Writing II requirement for the university. To receive Writing II credit you must complete all 3 quarters of the course. In order for the spring quarter seminar of your Cluster course to satisfy the College's Writing II requirement, you must satisfy the Writing I requirement by the end of winter quarter. If you have not satisfied the Writing I requirement with an AP English score, an IB English score, or transfer work, you must take English 3 in the winter quarter and complete it with a grade of C or better. Please note that the English Comp 3 course space is very limited in Spring quarter. So we suggest you take it this quarter.

Evaluation

2 short papers (6 pages each)	150 points
Best 3 grades on 4 quizzes	90 points
Midterm Exam	100 points
Presentations	30
Final Exam	150 points

Grading is based upon a 70 (C), 80 (B), 90% (A) scale that may be adjusted downward.

Examinations and quiz formats will combine short answers and objective type questions (True/False, multiple choice, etc).

Policy on make-up exams: make-up exams are possible only in dire and documented circumstances (ie, illness), and only if the instructor is notified in advance.

Policy on late assignments: 50% grade reduction if turned in within 1 week after due date.

Class Rules

1. In discussion section and lecture hall **ALL cell phones must be OFF**. It is very distracting to instructors to either hear phones ringing or see students looking at their phones or texting messages. Leaving the class to answer phone messages or to text **is not appropriate** and distracting.

2. Students may use laptops in class **only for taking notes**. If you are found doing other things in class on the laptop you will be asked to stop. That will be embarrassing to you and will be brought to the instructor's attention. Such inappropriate behavior is distracting to instructors and students around you. We want you to do well in this course and any distractions to your instructors, other students and YOU are not appropriate.

Weekly Readings

All readings can be found on the class web site. You are responsible for all material posted on our web site and that includes corrections, changes, additions to what we publish the first day of class.

TEXTBOOK: Brain, Mind, and Behavior. 3rd ed. Bloom, F., Nelson C., and Lazerson A. 2005.

Additional readings will come from magazines, book chapters and journal articles.

Accommodations for Students with Disabilities
You may request accommodations due to disability by contacting the Office for Students with Disabilities located in A255 Murphy Hall, (310) 825-1501. **WEB link:www.osd.ucla.edu**

COURSE SCHEDULE AND TOPICS

I. Biological and behavioral bases of Memory and Learning in health and disease

Introduction (Jan 8) Course information (*Chandler*)

Lec 1 **The Palace of Memory: Historical perspective** (*Meldrum*)

Readings: Excerpt from Yates, Frances, *The Art of Memory* (Chicago, 1996); Windholz, George, Pavlov's conceptualization of learning. *American Journal of Psychology* 1992, **105**: 459-469; Franz, Shepherd Ivory, Observations on the functions of the association areas (cerebrum) in monkeys. *Journal of the American Medical Association* 1906; **47**: 1464-1467; Excerpt from Lashley, Karl S., In search of the engram. *Symposia of the Society for Experimental Biology* 1950, **4:** 454-482; Beach, T.G. The history of Alzheimer' disease: Three debates. *Journal of the History of Medicine and the Allied Sciences.* 1987; **42**: 327-349

Lect 2 (Jan 10) Memory systems and their organization within the brain *(Knowlton)*

Readings: Squire, L.R. (2004), Memory systems of the brain: A brief history and current perspective. Neurobiology of Learning and Memory, 82:171-177.

Lect 3 (Jan 15) The amnesic syndrome *(Knowlton)*

Readings: Wearing, D. (2006). Forever Today (Part 1: The Man Who Fell Out of Time), Corgi Books, London, U.K.

Lect 4 (Jan 17) Biological mechanisms of Brain Plasticity: Can learning be optimized? *(Knowlton)*

Readings: Pinel J.P (2011) *Biopsychology*, 8th Edition. Section 11.8 Synaptic Mechanisms of Learning and Memory. pp 290-294. Bjork, E.L. * Bjork, R. (2009). Making things hard on yourself, but in a good way: Creating desirable difficulties to enhance learning. In M.E. Gersbacher, R.W. Pew, L.M. Hough, & J.R. Pomerantz, *Psychology and the Real World*, Worth Publishers, New York

II. Motor Systems: How we physically navigate our world

Lect 5 (Jan 22) **Dancin' and Shakin'**: The Brain and Movement (Historical perspective)**(***Meldrum***)**

Readings: Excerpt from Parkinson, James, *An Essay on the Shaking Palsy* (London, 1817); Lajonchere, C., Nortz, M., and Finger, S., Gilles de la Tourette and the discovery of Tourette's syndrome. *Archives of Neurology* 1996, **53:** 567-574; Tansey, E.M., Henry Dale and the discovery of acetylcholine. *Comptes rendus biologies*, 2006

May-Jun, **329**(5-6): 419-425; Walker, Mary B. Treatment of myasthenia gravis with physostigmine. *Lancet,* 2 June 1934, **i**, 1200-1201.

Lect 6 (Jan 24) Movement: Historical perspective- *continued* (*Meldrum*)
Lect 7 (Jan 29) The basic structure of the sensory- motor system (*Chandler*)

Readings: Bloom, Nelson, Lazerson and Annenberg (BNLA), Brain, mind, and behavior, 2005, 3rded. Pgs 97-162, other**.**

Lect 8. (Jan 31) How we respond to environmental stimuli: Reflexes (*Chandler*)

Lect 9 (Feb 5) How we initiate and maintain movement: Higher centers (*Chandler*)
Lect 10 (Feb 7) Do we really need a brain to walk? Central pattern generators (*Chandler*)

III. Why his Dancin' is different: Diseases affecting the Motor System

Readings: Bloom, Nelson, Lazerson and Annenberg (BNLA), Brain, mind, and behavior, 2005, 3rd.

Lect 11: (Feb 12) Disease, injury and disorders of the motor system (*Levine*)
Lect 12: (Feb 14) *Continued*

Lect 13. (Feb 19) *Continued*

Exam 1 (Feb 21)

IV. Mental Health: Historical perspective to treatment

Lect 14: (Feb. 26) Ministering to a Mind Diseased: Mental Illness: Historical perspective (*Meldrum*)

Readings *(33 pages):* Weiner, Dora B., Philippe Pinel's "Memoir on Madness" of December 11, 1794. *American Journal of Psychiatry* 1992; **149**: 725-732; Jablensky, A., Living in a Kraepelinian world: Kraepelin's impact on modern psychology. *History of Psychiatry* 2007; **18**: 381-388; Excerpt from Healy, David, *The Creation of Psychopharmacology.* (Cambridge, MA, 2002); Harding C.M., Brooks G.W., Ashikaga T., Strauss J.S. and Breier A, The Vermont longitudinal study of persons with severe mental illness II. *American Journal of Psychiatry* 1987; **144**: 727-735

Lect 15 (Feb 28) *Continued*

Lect 16 (March 5) The Limits of Rationality (*Cumming*)

Readings *(10 pages):* Camerer, Colin, Taxi Drivers and Beauty Contests, *Engineering and Science* 1997, **1**: 10-19.

Lect 17 (March 7) *Continued*

Lect 18 (March 12) Dysfunctional mind: mood disorders (*Levine*)

Readings: Bloom, Nelson, Lazerson and Annenberg (BNLA), *Brain, mind, and behavior, 2005, 3rd ed. Pg 361-407.*

Lect 19 (March 14) Dysfunctional mind: Thought and Anxiety disorders (*Levine*)

FINAL EXAM **TBA**