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| **Macintosh HD:Users:elainereynolds:Desktop:65925018422430310042f2297ecfaf45--portrait-pictures-portrait-ideas.jpg** | **Introduction to Neuroscience**  **Neur 201**  **Spring 2019**  T/Th 9:30-10:45 am in Oechsle Auditorium  Professor Elaine Reynolds  office: 107/8 Kunkel Hall  phone: 330-5654  email: [reynolde@lafayette.edu](mailto:reynolde@lafayette.edu)  office hours: W 11am-1pm |

I will be available to answer questions during class or at office hours. I will notify you during lecture if there is a change in my office hours. Also, additional office hours and review sessions may be scheduled prior to examinations.

We will also be using a Moodle site in this course. You can find this site at <http://moodle.lafayette.edu>. We will discuss use of this tool during the first class session.

Moodle privacy statement:

Moodle contains student information that is protected by the Family Educational Right to Privacy Act (FERPA). Disclosure to unauthorized parties violates federal privacy laws. Courses using Moodle will make student information visible to other students in this class. Please remember that this information is protected by these federal privacy laws and must not be shared with anyone outside the class. Questions can be referred to the Registrar’s Office.

**Course Description**

This course takes a problem-based approach introduction to the field of neuroscience. The basic problem that will be our focus for the semester is consciousness. We will first attempt to define what we mean by consciousness and look at historical perspectives on this concept. Then, we will focus on a scientific, neuroscience approach to the problem and to accumulate the knowledge necessary to begin to address this problem. We will look at current theories of consciousness based on this scientific approach, and then look at alternative hypotheses.

This course is intended for any student with an interest to the field of neuroscience. This course is a requirement for the BS in Neuroscience major. This course also fulfills a requirement as an elective course in Psychology.

**Student Learning Outcomes**

Students at the end of the course will be able to:

* demonstrate that they have a new base of knowledge about neuroscience
* integrate information over different levels of complexity and across disciplines.
* evaluate evidence and ideas to develop their own ideas about consciousness

**Texts**

Two books are required for this course.

Timothy Verstynen and Bradley Voytek.  *Do Zombies Dream of Undead Sheep:  A Neuroscience View of the Zombie Brain.*Princeton University Press. 2014  ISBN 978-0-691-15728-3 (hardback)  
  
Christof Koch *Consciousness: Confessions of a Romantic Reductionist* Hardcover 2012  
MIT Press  ISBN-13: 978-0262017497 ISBN-10: 0262017490 First edition

In addition to these texts, students will have a **large** number of other readings or video assignments for the course. I will post all other material assigned on Moodle.

**Course Mechanics**

**Before class.** There is a lot of reading/videos in this course and you will be required to do Moodle posts for some classes. It is essential to your understanding of the material presented and your participation in class for you to read or view the assigned material **before** coming to class. I will post forums at least 48 hrs before class. Please check Moodle and your email regularly. Sometimes the post will expect you to discuss the readings assigned for that day; other times I will be looking for your ideas. Your grade will reflect the number of postings you have made for the semester, in other words if you post to 100% you will receive 100, 80% you will receive an 80 and so on. If you are shy about speaking up in class, these discussions provide an alternative for you to enhance your participation and to show me how well you understand the material.

**During class.** This course will combines lecture and discussion into each 75 minute session, although the relative content may vary from class to class. Please be on time for the class sessions as I will make announcements regarding course material changes, test review sessions, etc. at the beginning of the lecture period. **Turn all cell phones and electronic devices off during class.**

Attendance in class is expected since I will seek to highlight important material assigned in the reading and I will cover additional material. I would strongly advise that you take notes in class in addition to any handouts I provide.

**Human Disorder Project.** Later in the semester, you and a group of your peers will examine a human neurological disorder. You will find information about the disorder using online internet searches and will examine how this disorder might impact consciousness. You and your group will turn in a 1-2 page summary of your finding and present the findings to the class (5 min presentation). You will receive a handout with more details about this assignment.

**Outside of class** (4th hour). In addition to classroom time, you will be expected to participate in **four** activities outside the classroom, which includes review sessions, films, seminars, art exhibits and other relevant activities on campus (see below). Each outside activity will be 1-3 hrs in length. I will announce the opportunities that will count for the class as they come up and post details on the Moodle site. When you attend an activity, you will need to write a **full page** **summary** (12 pt, single spaced, 1 inch margins) about the event and how it related to the class. **No outside materials should be used to create your summary. If you do, you will receive a 0 for that summary.** You will have one week after the event to turn the summary in **via email.** **I will not accept any summaries on paper.** I will review your summary and email it back to you. The summaries will serve as a component of the final grade. More information about outside activities will be available on Moodle

**Assessment.** You will have three Exams in the course, two 75 min exams and a two-hour exam during finals week. **If you must miss an exam because of a reasonable conflict, you must make arrangements in advance with me.** If you miss an exam because of sickness or emergency, please notify me as soon as possible. A Dean’s excuse will be required if an exam is missed without prior arrangement because of sickness or any other conflict.The relative contribution to your grade of each assessment is as follows:

In summary:

Exam I 20%

Exam II 25%

Exam III 25%

Human Disorder Project 15%

Moodle postings/participation 5%

Outside Activities 10%

**Academic Honesty.** I expect that you will perform this work independently and honestly as laid out in the student handbook and departmental statement on academic honesty that is attached to this syllabus. The handbook states:

To maintain the scholarly standards of the College and, equally important, the personal ethical standards of our students, it is essential that written assignments be a student’s own work, just as is expected in examinations and class participation. A student who commits academic dishonesty is subject to a range of penalties, including suspension or expulsion. Finally, the underlying principle is one of intellectual honesty. If a person is to have self-respect and the respect of others, all work must be his/her own.

**Diversity, Inclusion and Equity Statement**

In this class we will respect and appreciate the background and perspective of every student regardless of their race, ethnicity, gender, social class, sexual orientation, religion, political affiliation, ability, and learning style. I am committed to providing an atmosphere for learning that respects diversity and inclusion, as well as promotes equality by removing educational barriers in our classroom. Please feel free to engage with me on how we might create an inclusive classroom together.

In compliance with Lafayette College policy and equal access laws, I am available to discuss appropriate academic accommodations that you may require as a student. Requests for academic accommodations need to be made during the first two weeks of the semester, except for unusual circumstances, so arrangements can be made. Students must register with the Office of the Dean of the College for verification and for determination of reasonable academic accommodations.

**Compliance statement.**

The student work in this course is in full compliance with the federal definition of a four credit hour course. Please see the Registrar’s Office web site (<https://registrar.lafayette.edu/wp-content/uploads/sites/193/2013/04/Federal-Credit-Hour-Policy-Web-Statement.doc>) for the full policy and practice statement**.**

**Tenative schedule-Spring 2019**

Readings/material are indicated for each class but are subject to change.

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| **week** | **Topic** | **Reading** |
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| 1-1/29 | Class 1 Course introduction  Definitions of consciousness  How can we study consciousness? | Koch Chap 1&3 read for weeks 1 and 2  Zombies-Intro read for weeks 1 and 2 |
| 1/31 | Class 2 Definitions of consciousness | “Is she conscious?” by Naccache and “Detecting awareness in the vegetative state?” by Owen et al. and other links on Moodle |
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| 2-2/5 | Class 3 Animal consciousness | “Mirror-Induced Behavior in the Magpie (Pica pica): Evidence of Self-Recognition” by Prior, Schwarz, and Gunturkun”  And other links on Moodle |
| …2/7 | Class 4 Ways of understanding consciousness religion, philosophy and science | Philosophy videos on Moodle  Koch/Greenfield Sci Am article on Moodle |
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| 3-2/12 | Class 5 Neurons, neuronal cell biology, electrical activity | Zombies Chap 1  Links on Moodle (animations) |
| 2/14 | Class 6 Neurons, Neural transmission, | Links on Moodle |
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| 4-2/19 | Class 7 Neural pharmacology and consciousness | Links on Moodle |
| 2/21 | Class 8 Basics of neural organization, circuitry | Zombies Chap 1  Links on Moodle |
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| 5-2/26 | Class 9 Larger patterns of neural activity and organization | Links on Moodle |
| 2/28 | Class 10 Tools for understanding brain activity | Links on Moodle, Koch Chap 9 |
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| 6-3/5 | **Exam I** |  |
| 3/7 | Class 11 Visual consciousness, illusions and art, | Links on Moodle |
|  |  |  |
| 7-3/12 | Class 12 Vision- Retinal, thalamic processing | Links on Moodle |
| 3/14 | Class 13 Primary cortex | Links on Moodle |
| 8-3/18-  22 | **Spring break** |  |
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| 9-3/26 | Class 14 Higher visual pathways | Zombies Chap 7, 8 Links on Moodle |
| 3/28 | Class 15 Where is visual consciousness? | Koch Chap 4, 5 pp. 59-70  Zombies Chap 7, 8 |
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| 10-4/2 | Class 16 Attention and Emotion | Zombies Chap 4, 5 and 7  Koch Chap 4, Koch article on Moodle |
| 4/4 | Class 17 Memory and consciousness | Zombies Chap 10 |
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| 11-4/9 | **Exam II** |  |
| 4/11 | Class 18 Sleep vs. Conscious Cortical/subcortical networks  *Discuss disorder project* | Zombies Chap 2, Links on Moodle |
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| 12-4/16 | Class 19 Sense of Self/Agency Embodied Consciousness | Koch Chap 6, 7, 8 Zombies Chap 9 |
| 4/18 | Class 20 Clinical Alterations to Consciousness | Koch Chap 5 pp 70-74  Zombies throughout, Chap 11  Posts on Moodle |
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| 13-4/23 | Human Disorder-presentations |  |
| 4/25 | Human Disorder-presentations |  |
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| 14-4/30 | Class 21 Review of clinical information, Consideration of the Octopus | Zombies Chap 11  Post on Moodle |
| 5/2 | Class 22 Religious and Cultural perspectives on consciousness | Koch Chap 2, 10  “The Universe in a Single Atom” on Moodle |
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| 15-5/7 | Class 23 Modification of consciousness by religious practice | Meditation articles on Moodle |
| 5/9 | Definitions of consciousness/review | Post on Moodle |

**Exam III during finals**