Fall 2015

PSYC 6801

Connie Lamm
University of New Orleans

Psyc 6801 – Fundamentals of Biopsychology 1

Monday's and Wednesday's from 3:00 to 4:15; Room 2078

Fall 2015

Course instructor: Connie Lamm, Ph.D. **Office:** GP 2034

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Office hours: 9:00 – 11:00 Tuesday, Wednesday, and Thursday, or by appointment.

Required material:

- The Sheep Brain: A Photographic Series, 2nd Edition, 2002, by C.H. Vanderwolf and R. K. Cooley.
- Eye protection (large, not too dark sunglasses would also work) and lab coat (or large, long-sleeved shirt)
- Access to a PC laptop

Reference book: Principles of Neural Science, 5th Edition, Kandel, Schwartz, Jessell, Siegelbaum, & Hudspeth, 2013.

Prerequisites: Prerequisites are admission to the graduate program in psychology and consent of the department.

Course description: Review of anatomical, physiological, and biochemical bases of behavior with special consideration of the consequences of disease or injury-caused disturbances.

Instructor's responsibility: Facilitate learning and evaluate depth of knowledge. The instructor's responsibility is NOT to provide information.

Student's responsibility: Actively pursue learning opportunities, develop the art of composing an argument, and learn to think critically about research topics.

Student Learning Outcomes.
By the end of this course, you will be able to:

- Gain in-depth knowledge about the neural correlates underlying various sensory, motor, and cognitive functions.
- Understand how the brain functions and be able to communicate about these processes.
- Be able to program in E-Prime, so that you can start developing your own experiments with human populations.
- Refine your presentation skills using Power Point.
- Improve your ability to think critically about research topics.

In order to reach these objectives you will need to:

1. Complete all assignments thoughtfully, accurately, and on time
2. Come prepared to do lab activities
3. Attend all class meetings
4. Pay attention to other student's presentations and be prepared to ask questions
5. Pay attention to and participate in class discussions
6. Read class material when it is assigned

Exam: You will have one exam, your lab exam. It will be a timed "bell-ringer" style exam. You will have to move around stations identifying brain regions and briefly outlining basic functions. No makeup exams available. If exam is missed and documentation is provided, a lengthy in depth "makeup" term paper will be assigned. If proper documentation is not provided, students who missed the exam will receive a zero.

E-prime experiment: You will be required to program a publishable E-prime experiment with multiple blocks and trials using both GUI events and scripting. The experiment cannot be a simple go/no-go task.

Presentations: Giving research presentations is a key part of being an academic. Learning to give both interesting and meaningful presentations is a skill that takes practice (a skill that you will continue working on your entire life). Therefore, throughout the course you will be required to give five 15-20 minute presentations. Each presentation will be an focused review of the literature on a very specific topic (do not just passively review the literature, make suggestions/interpretations and set up future directions). Presentations will require the use of power point or another presentation program. Presentations need to include images and illustrations, and not just text. You WILL lose marks if you read your entire presentation. Additionally, presenters are required to distribute one key article related to their presentation <u>one week before</u> their presentation. Late distribution will result in a reduction of grade. Presenters need to bring all relevant articles with them in case different presenters provide discrepant information (this will definitely happen and is normal). Please send instructor a version of your presentation the day before the presentation is due (it does not have to be the final version) – to aid in marking. Missed presentations, if appropriate documentation, e.g., doctor's note, is provided can be presented the following week. Without proper documentation, students will receive a zero for that presentation (5 presentations each).

<u>Presentation rubric</u> (each presentation will be worth 10% of your final grade)

- Slide organization and clarity (3%)
    - Illustrations on almost every slide (ensure accuracy of illustrations)
    - Point form text not paragraphs
    - Slides present information clearly
    - Organization is logical
- Verbal presentation (3%)
    - Content is communicated clearly with minimal jargon
    - Speed of speech is appropriate
    - Transitions between subsections are smooth

  - Text is not obviously read
  - Body language is engaged and directed towards audience
- Content (4%)
  - **Presentation tells a clear story**
  - Literature is actively reviewed
  - A substantial number of articles are referenced in the presentation
  - Meaningful points are summarized at the end of each section for clarity
  - **Typical function is outlined first and then atypical function**
  - Future directions flow naturally from the presentation story

Questions: Graduate students often shy away from questioning colleagues. The art of asking critical questions in a supportive fashion is important. Therefore, during each lecture, you are required to ask at least one question. Both questions of clarification and concern (critical argument) on the topic are acceptable. Questions that are insightful and encourage discussion are valued more than questions that just require a yes/no answer. Structure your question in a way that allows the presenter to understand where you are coming from. Whenever possible, use real world examples to clarify your questions. Of course, asking questions is easier when you understand the topic. Thus, students are encouraged to read up on topics in the Kendel book and other resources before class as well as reading the one key article distributed by the presenter.

Since we will not be having any midterms or final exams (outside of the lab exam), the depth of your knowledge will be ascertained by the quality of your presentations and questions.

Conduct. As a university student you are expected to treat your classmates, your instructor, and yourself with respect at all times. This includes respecting that others may have a different opinion about a topic than you do. This not only applies in the classroom, but also includes office hours and communication through email or written material. Being respectful includes arriving to class on time and if you are late, minimizing distraction to other students. Being loud or disruptive or talking excessively during class will not be permitted. The use of cell phones (talking or texting), playing computer games, or getting on social media sites is also not permitted during class. Students engaged in this type of behavior will be asked to leave the class. Turn your cell phone ringer off before class; if you get an important call please leave the classroom.

Cheating will not be tolerated in the course. All your work needs to be your own work. Do not plagiarize! For further information please see the academic dishonesty statement below.

Academic Integrity. Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the Academic Dishonesty Policy for further information. The Policy is available online at http://www.uno.edu/student-affairs-enrollment-management/student-accountability-advocacy.aspx.

Disability Accommodations. It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information, please go to http://www.ods.uno.edu.

Attendance Policy. All students must attend all classes and complete all assignments. Late assignments will be docked marks. Students may only miss classes if formal documentation is presented. Otherwise, they will be docked marks.

Final grades will be based on the following points scale:

A = 90-100%
B = 80 – 89%
C = 70 – 79%
D = 60 – 69%
F = below 60%

Course grade breakdown:

5 Presentations	50% (10% each)
Questions	15%
Lab exam	15%
E-prime task	20%

Schedule

Week 1 Wednesday August 19th

- Overview of course and assign presentations.
- Discuss interests
- Connie lecture on basic orientation in the brain.
- Sign up for presentations.
- Introduce website:

(http://www9.biostr.washington.edu/cgi-bin/DA/PageMaster?atlas:Neuroanatomy+ffpathIndex:Splash^Page+2)

Week 2 Monday August 24th

- Connie lecture 2

Wednesday August 26th

- E-prime lecture/workshop 1

Week 3 Monday August 31st

- Connie lecture 3

Wednesday September 2nd

- E-prime lecture/workshop 2

Week 4 Monday September 7th – Labor Day

Wednesday September 9th

- E-prime lecture/workshop 3

Week 5: Monday September 14th

- **Presentation 1;** neuroimaging method presentations: Half of class will be responsible for researching and presenting the specifics of a method used in neuroscience. Please present information in a clear and concise fashion, using research examples to highlight strengths and weaknesses. Avoid "technojargon". Use illustrations for clarity. To aid in understanding, if your research supervisor is using a method or you have used a method extensively in the past, please feel free to present on this topic. Topics that need to be covered: MRI, fMRI, DTI, EEG, ERP, PET, TMS (transcranial magnetic stimulation). Each presentation will be about 15 minutes long. Students are encouraged to ask questions. Class will end with a general discuss about the strengths and weakness of each method, and issues we need to keep in mind when assessing special populations.

Wednesday September 16th

- Jerry lecture on genetics, gene-by-environment interactions, and epigenetic mechanisms: from broad to specific.

Week 6 Monday September 21st

- **Presentation 1;** neuroimaging method presentations: Other half of class will be responsible for researching and presenting the specifics of a method used in neuroscience (no overlap from previous week please). Please present information in a clear and concise fashion, using research examples to highlight strengths and weaknesses. Avoid "technojargon". Use illustrations

for clarity. To aid in understanding, if your research supervisor is using a method or you have used a method extensively in the past, please feel free to present on this topic. Topics that need to be covered: MRI, fMRI, DTI, EEG, ERP, PET, TMS (transcranial magnetic stimulation). Each presentation will be about 15 minutes long. Students are encouraged to ask questions. Class will end with a general discuss about the strengths and weakness of each method, and issues we need to keep in mind when assessing special populations.

Wednesday September 23rd

- E-prime lecture/workshop 3 – work on task in class

Week 7 Monday September 28th

- **Presentation 2**: Half of class presents on different **sensory and perception disorders/problems** (roughly 15 minutes each). Each presentation will start with a brief overview of the relevant normal function, and subsequently, each disorder/problem needs to be compared to the normative function. Remainder of class is required to ask questions (clarifications and concerns).

Wednesday September 30th

- Informal E-prime task presentation: what is your task and why did you program it that way
- Submit E-prime task

Week 8 Monday October 5th

- **Presentation 2**: Other half of class presents on different **motor, movement, and posture disorders/problems** (roughly 15 minutes). Each presentation will start with a brief overview of the relevant normal function, and subsequently, each disorder/problem needs to be compared to the normative function. Remainder of class is required to ask questions (clarifications and concerns).

Wednesday October 7th

- Dissection: Lab 1. Be aware that some sheep brains will be in better shape than others and thus will be easier to find specific markers. Each person will have their own sheep brain but sharing of resources to find the best specimens and thus the clearest anatomical markers is encouraged.

Week 9 Monday October 12th

- **Presentation 3**: Half of class presents on different **language disorders/problems** (roughly 15 minutes). Each presentation will start with a brief overview of the relevant normal function, and subsequently, each disorder/problem needs to be compared to the normative function. Remainder of class is required to ask questions (clarifications and concerns).

Wednesday October 14th

- Independent reading – Midterm break

Week 10 Monday October 19th

- **Presentation 3**: Other half of class presents on different **memory and learning disorders/problems** (roughly 15 minutes). Each presentation will start with a brief overview of the relevant normal function, and subsequently, each disorder/problem needs to be compared to the normative function. Everyone is required to ask questions (clarifications and concerns).

Wednesday October 21st

- Dissection: Lab 2

Week 11 Monday October 26th

- **Presentation 4**: Half of class presents on different **motivation and addiction disorders/problems** (roughly 15 minutes). Each presentation will start with a brief overview of the relevant normal function, and subsequently, each disorder/problem needs to be compared to the normative function. Everyone is required to ask questions (clarifications and concerns).

Wednesday October 28th

- Dissection: Lab 3

Week 12 Monday November 2nd

- **Presentation 4**: Other half of class presents on the **impact of stress** (roughly 15 minutes). Each presentation will start with a brief overview of the relevant normal function, and subsequently, each disorder/problem needs to be compared to the normative function. Everyone is required to ask questions (clarifications and concerns).

Wednesday November 4th

- Dissection: Lab 4

Week 13 Monday November 9th

- Dissection: Lab 5

Wednesday November 11th

- Dissection: *Practice* lab exam

Week 14: Monday November 19th

- Independent or group study for lab exam

Wednesday November 18th

- Dissection: Lab exam

Week 15 Monday November 23rd

- **Presentation 5**: Half of class presents on different **emotion perception and emotion regulation** disorders/problems (roughly 15 minutes). Each presentation will start with a brief overview of the relevant normal function, and subsequently, each disorder/problem needs to be compared to the normative function. Everyone is required to ask questions (clarifications and concerns).

Wednesday November 25th – Thanksgiving

Week 16 Monday November 30th

- **Presentation 5**: Other half of class presents on different **cognitive and cognitive control disorders/problems** (roughly 15 minutes). Each presentation will start with a brief overview of the relevant normal function, and subsequently, each disorder/problem needs to be compared to the normative function. Everyone is required to ask questions (clarifications and concerns).
- **Informal class evaluation**

Wednesday December 2nd

- **Formal class evaluation**
- **Wrap up**