PSB 6099: Physiological & Comparative Psychology

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Fall 2018

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Office Hours: W 10:45-11:45 a.m.
Office: 357 Psychology Building

Web: ufl.instructure.com/courses/354679
Class Hours: Monday 1:55-4:55 p.m.
Class Room: 113 Keene-Flint Hall (FLI)

Course Description

This course is an introductory survey of neuroscience with special relevance to psychology. An overall goal of this course is to gain appreciation of many of the physiological processes that result in functions of the brain. With an exposition of the tools and perspectives of neuroscience, we will consider how molecular pathways and neural systems produce psychological phenomena. Finally, we will study the application of neuroscience to understand normal brain development, optimize personal wellbeing, and treat disruptions of brain function.

Course Objectives

1. Understand how behavior relates to the structures and functions of the nervous system
2. Explore the mechanisms of sensation, homeostasis of internal states, and behavior
3. Survey mechanisms of functions of motor control, motivation, affect, and cognition
4. Examine how application of neuroscience principles and approaches contributes to remediation and enhancement of psychological well being
5. Investigate how disruptions of neural systems contribute to mental dysfunction
6. Engage in and facilitate discussions to apply knowledge and deepen understanding

Required Readings


Class Schedule

Please read assigned book chapters and discussion papers before Monday’s class session. Important: textbook readings are subject to change, contingent on mitigating circumstances and the progress we make as a class. Students are encouraged to attend lectures and check the course website for updates.
Table 1: Schedule of chapter topics from Carlson and Birkett (2016)

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Assessment</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>08/20 - 08/24</td>
<td>No class</td>
<td>2–Structure and Function of Cells of the Nervous System</td>
</tr>
<tr>
<td>2</td>
<td>08/27 - 08/31</td>
<td>2–Structure of the Nervous System</td>
<td>6–Vision</td>
</tr>
<tr>
<td>3</td>
<td>09/03 - 09/07</td>
<td>No class: Labor Day</td>
<td>7–Audition, the Body Senses, and the Chemical Senses</td>
</tr>
<tr>
<td>4</td>
<td>09/10 - 09/14</td>
<td>3–Structure of the Nervous System</td>
<td>9–Sleep and Biological Rythms</td>
</tr>
<tr>
<td>5</td>
<td>09/17 - 09/21</td>
<td>6–Vision</td>
<td>10–Reproductive Behavior</td>
</tr>
<tr>
<td>6</td>
<td>09/24 - 09/28</td>
<td>Exam 1 (due before Oct 1)</td>
<td>11–Emotion</td>
</tr>
<tr>
<td>7</td>
<td>10/01 - 10/05</td>
<td>9–Sleep and Biological Rythms</td>
<td>13–Learning and Memory</td>
</tr>
<tr>
<td>8</td>
<td>10/08 - 10/12</td>
<td>10–Reproductive Behavior</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>10/15 - 10/19</td>
<td>11–Emotion</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10/22 - 10/26</td>
<td>Exam 2 (due before Oct 29)</td>
<td>13–Learning and Memory</td>
</tr>
<tr>
<td>11</td>
<td>10/29 - 11/02</td>
<td>Presentation and Discussion</td>
<td>Levels of Analysis and Causality</td>
</tr>
<tr>
<td>12</td>
<td>11/05 - 11/09</td>
<td>...</td>
<td>RDoC and DSM-V</td>
</tr>
<tr>
<td>13</td>
<td>11/12 - 11/16</td>
<td>No class: Veterans’ Day</td>
<td>RDoC and DSM-V</td>
</tr>
<tr>
<td>14</td>
<td>11/19 - 11/23</td>
<td>Presentation and Discussion</td>
<td>Early Intervention</td>
</tr>
<tr>
<td>15</td>
<td>11/26 - 11/30</td>
<td>...</td>
<td>Neurodiversity and Performance</td>
</tr>
<tr>
<td>16</td>
<td>12/03 - 12/07</td>
<td>Term Paper (due by Dec 5)</td>
<td></td>
</tr>
</tbody>
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Summary of Grading

- **20%** of your grade will be determined by your presentation of two discussion papers.
- **10%** of your grade will be determined by your participation in class discussion.
- **20%** of your grade will be determined by a 6-page term paper (~1500 words).
- **25%** of your grade will be determined by a take home midterm exam.
- **25%** of your grade will be determined by a take home final exam.

Details of Grading and Class Policies

**PRESENTATION OF DISCUSSION PAPERS:** In order to better engage with and integrate material from Carlson and Birkett (2016), we will apply our knowledge toward important interdisciplinary issues in mental health and education. Presentation of two papers will account for 10% each (i.e., for total 20% of course grade). Students are encouraged to make use of information from chapters 14-18 in the primary textbook.
Selection of discussion papers will be made from two of the following areas:

- **Levels of Analysis and Causality**
  - Glatt & Lee (2016); Hauser, Fiore, Moutoussis, & Dolan (2016); Krakauer, Ghazanfar, Gomez-Marín, MacIver, & Poeppel (2017); MacDougall-Shackleton (2011); Parada & Rossi (2018)
- **Research Domain Criteria (RDoC) and DSM-V**
  - Cosgrove, Kelsoe, & Suppes (2016); Cuthbert & Insel (2013); Kozak & Cuthbert (2016); Lang, McTeague, & Bradley (2016); Lilienfeld (2014); Lupien et al. (2017)
- **Early Intervention and Prevention**
- **Neurodiversity & Performance**
  - Billeci et al. (2016); Lorenz & Heinitz (2014); Walsh, Elsabbagh, Bolton, & Singh (2011)

**DISCUSSION & PARTICIPATION**: Discussion and participation will account for 10% of the final grade. Attendance will be tracked as part of overall classroom participation.

**TERM PAPER** The goal of this paper is to make a case for the benefits and limitations of translational neuroscience for approaches to remediate and enhance psychological wellbeing. The term paper will require application of knowledge about neurophysiological and comparative behavioral neuroscience from Carlson and Birkett (2016).

**EXAMS**: Throughout the semester there will be two exams; the second exam will NOT be cumulative. Each exam will consist of a combination of multiple-choice questions, true/false, fill in the blank, and short answer/essay questions. Each exam will comprise 25% of the course grade (i.e., total 50% of course grade).

**UF HONESTY POLICY**: UF students are bound by The Honor Pledge, which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TA in this class.

**CLASS EVALUATIONS**: Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/

**STUDENTS REQUIRING ACCOMMODATIONS**: Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter, which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

**COUNSELING AND WELLNESS CENTER**: Contact information for the Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc/Default.aspx, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.
Class Discussion Bibliography


