

Syllabus: PSB6088 Behavioral and Cognitive Neuroscience II Spring 2023

Instructor: Andreas Keil, Ph.D., Prof. of Psychology
Class Location: Little Hall 0207
Time: Tuesdays Period 9 - 11 (4:05 PM - 7:05 PM)
Credits: 3.0

Andreas' email: akeil@ufl.edu. This is the best way to contact me.
I hold office hours at the center for the study of emotion of attention, surge area,
southwest area of campus: Wednesdays 2:15-3:30 PM, my phone is 352 392 2439. It is
always a good idea to contact me for an appointment.
A map to the center (my office) can be found here:
<https://csea.php.ufl.edu/directions.html>

Description: This course continues Part I of the 6097/6088 sequence, introducing the graduate-level foundations of behavioral and cognitive neuroscience. There is no textbook. Reading will consist of lectures on specific chapters provided by me (see below), recent review articles, and practical exercises.

Thus, in this course I will:

- a) explain the scientific bases of contemporary neurobiological theories of behavior and cognition.
- b) inform students about the implications of these fundamental processes for their own research
- c) prepare students for further, more specialized graduate-level training in behavioral and cognitive neuroscience.

By the end of this course, it is expected that students will be able to:

- a) define relevant mechanisms and concepts, at a behavioral and neural level & critically evaluate empirical studies in this area or research.
- b) know the research methods and research questions that are currently examined.
- c) recognize common strengths and weaknesses of this research area,
- d) implement some selected analysis techniques as appropriate for their own research interest
- e) understand clinical implications of neuroscience mechanisms and models

Overall content summary:

Advanced principles of neuroanatomy, neurophysiology, and neurochemistry will be discussed to develop an understanding of how these biological factors underlie human brain function. The major sensory, motor and integrative neural systems of the human brain are discussed. Based on an understanding of normal neural connections and brain function, the anatomical and physiological basis of various neurological disorders is explored. Topics will include learning and memory, emotions, and neurological and neuropsychiatric disorders. Applications in research, current research methods, and aspects of dissemination, review, and funding for neuroscience research are also discussed. Practical exercises tap into reading, writing, and data analysis in neuroscience.

Weekly Schedule:

| Week number | Reading topic (Readings will be shared on e-learning) | Brain area |
|-------------|--|--------------------------------------|
| Week 1 | Initial meeting – aims and scope of the class; syllabus, readings | The brainstem |
| Week 2 | Functional Brain Anatomy: Overview, materials, and methods for studying | The cranial nerves |
| Week 3 | Biological basis of brain function: Overview | The thalamus |
| Week 4 | Cellular mechanisms and signaling | The basal ganglia |
| Week 5 | Methods of Neuroscience | Deep sensory nuclei |
| Week 6 | Microscale, Mesoscale, Macroscale analysis of brain function and how they inform each other | Deep neuromodulation nuclei |
| Week 7 | Cortical neuronal networks – their histology, anatomy, and neurocomputational properties | Brain areas for autonomic regulation |
| Week 8 | Visual Neuroscience | Sensory systems |
| Week 9 | Midterm review and exam (research essay) | Motor systems |
| Week 10 | The concept of Hebbian Assemblies: Perception, Attention, and Motivation Attention and oculomotor function: what attention is for | Higher-order cognitive systems |
| Week 11 | Auditory Neuroscience | |
| Week 12 | <i>Clinical Neuroscience: neurological disorders</i> | |
| Week 13 | Clinical Neuroscience: psychiatric disorders | |
| Week 14 | <i>Final exam (research essay)</i> | |

Attendance and Make-up Assignments:

Quizzes on each week's text (on UF e-learning) are due *before the beginning* of each class period, as indicated in the list below. Each day or fraction of a day that a written assignment is late (unless there is a medical reason) carries a 50% penalty. This course is reading-intensive and the material is quite complex. I will do my best to provide you with

what you need to succeed. **If you do not come to class, you are going to get behind very quickly.** More than one unexcused absence will be considered unacceptable, and will influence the 20% of the course grade allocated to overall participation. An absence is considered *excused* if there is an *acceptable reason* according to UF policy (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>), and make-up activities can be arranged when necessary if they are missed due to an acceptable reason.

Accommodations for Students with Disabilities: Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. Contact the Disability Resources Center (<http://www.dso.ufl.edu/drc/>) for information about available resources for students with disabilities.

Student Assistance and Emergencies

- University support services are available to students who are experiencing significant distress and/or personal emergencies. As appropriate please contact:
- Health and Wellness
 - University Police Department: 352-392-1111 or 9-1-1 for emergencies, <http://www.police.ufl.edu/>
 - U Matter, We Care: ^{[[SEP]]}If you or a friend is in distress, please contact umatter@ufl.edu or 352 392- 1575 so that a team member can reach out to the student.
 - Counseling and Wellness Center: <http://www.counseling.ufl.edu>, 392-1575
 - Sexual Assault Recovery Services (SARS): Student Health Care Center, 352-392-1161.
 - Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf
- Academic Resources
 - E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>. ^{[[SEP]]}
 - Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <http://www.crc.ufl.edu/> ^{[[SEP]]}
 - Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.
 - Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>
 - Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio/>
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ACADEMIC HONESTY GUIDELINES: The academic community of students and faculty at the University of Florida strives to develop, sustain and protect an environment of honesty, trust and respect. Students are expected to pursue knowledge with integrity. Academic integrity, as a shared value, is dependent on the mutual trust and respect by all

members of an academic community. Cheating threatens all who are part of this shared system, and therefore, it's essential to report any violations to the UF SCCR Office. Please encourage others to act with respect for their community.

The Honor Pledge: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Student 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."

POLICY ON SEXUAL HARASSMENT: Sexual Harassment is not tolerated in this class, in the Department of Psychology, or at the University of Florida. Sexual harassment includes: the inappropriate introduction of sexual activities or comments in a situation where sex would otherwise be irrelevant. Sexual harassment is a form of sex discrimination and a violation of state and federal laws as well as of the policies and regulations of the university. All UF employees and students must adhere to UF's sexual harassment policy which can be found here: <https://hr.ufl.edu/forms-policies/policies-managers/sexual-harassment/>. Please review this policy and contact a university official if you have any questions about the policy. As mandatory reporters, university employees are required to report knowledge of sexual harassment to UF's Title IX coordinator. For more information about UF's Title IX office see: <https://titleix.ufl.edu/>. You can also complete a Sexual Harassment Report online (Title IX) at: <https://titleix.ufl.edu/title-ix-reporting-form/>.

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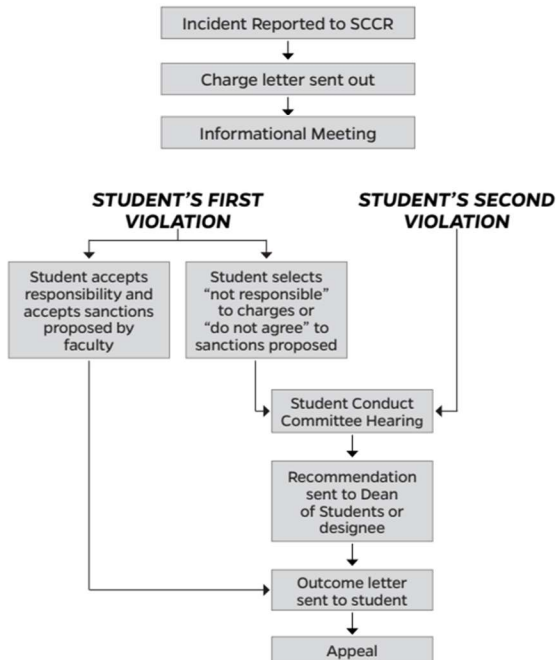
The Orange Book

ACCOUNTABILITY EXPECTED | KNOW OUR CODE



UF REGULATION 4.040

Student Honor Code PROCESS



3. Violations of the Student Honor Code

The Honor Pledge: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Student 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."

A. CHEATING.

A Student cannot use unauthorized materials or resources in any academic activity for academic advantage or benefit. Cheating includes but is not limited to:

1. Using any materials or resources prepared by another Student without the other Student's express Consent or without proper attribution to the other Student.
2. Using any materials or resources, through any medium, which the Faculty has not given express permission to use and that may confer an academic benefit to the Student.
3. Using additional time, or failing to stop working when instructed, on any time-bound academic activity.
4. Failing to follow the directions of a proctor of any academic activity, when such conduct could lead to an academic advantage or benefit.
5. Collaborating with another person, through any medium, on any academic activity, when Faculty has expressly prohibited collaboration.

B. COMPLICITY IN VIOLATING THE STUDENT HONOR CODE.

Attempting, aiding, encouraging, facilitating, abetting, conspiring to commit, hiring someone else to commit, giving or receiving bribes to secure, or being a participant (by act or omission) in any act prohibited by the Student Honor Code.

C. FALSE OR MISLEADING INFORMATION.

A Student cannot use unauthorized materials or resources in any academic activity for academic advantage or benefit. Cheating includes but is not limited to:

1. A Student must not make a false or misleading statement during the Investigation or resolution of an alleged Student Honor Code violation.
2. A Student must not make a false or misleading statement for the purpose of procuring an improper academic advantage for any Student.
3. A Student must not use or present fabricated information, falsified research, or other findings if the Student knows or reasonably should be aware that the information, research, or other finding is fabricated or falsified.

D. INTERFERENCE WITH AN ACADEMIC ACTIVITY.

1. A Student must not take any action or take any material for the purpose of interfering with an academic activity, through any means over any medium.
2. A Student must not be disruptive to the testing environment or other academic activity.

E. PLAGIARISM.

A Student must not represent as the Student's own work all or any portion of the work of another. Plagiarism includes but is not limited to:

1. Stealing, misquoting, insufficiently paraphrasing, or patch-writing.
2. Self-plagiarism, which is the reuse of the Student's own submitted work, or the simultaneous submission of the Student's own work, without the full and clear acknowledgment and permission of the Faculty to whom it is submitted.
3. Submitting materials from any source without proper attribution.
4. Submitting a document, assignment, or material that, in whole or in part, is identical or substantially identical to a document or assignment the Student did not author.

F. SUBMISSION OF ACADEMIC WORK PURCHASED OR OBTAINED FROM AN OUTSIDE SOURCE.

A Student must not submit as their own work any academic work in any form that the Student purchased or otherwise obtained from an outside source, including but not limited to: academic materials in any form prepared by a commercial or individual vendor of academic materials; a collection of research papers, tests, or academic materials maintained by a Student Organization or other entity or person, or any other sources of academic work.

G. UNAUTHORIZED RECORDINGS.

A Student must not, without express authorization from Faculty, make or receive any Recording, through any means over any medium, of any academic activity, including but not limited to a Recording of any class or of any meeting with Faculty. Students registered with the Disability Resource Center who are provided reasonable accommodations that include allowing such Recordings must inform Faculty before making such Recordings.