



Graduate School of Applied and Professional Psychology (GSAPP)
Rutgers University
New Brunswick, New Jersey
Summer 2024

Biological Bases of Behavior
18:820:622
Credits: 3
Level: Graduate
Mondays & Wednesdays 12:20- 3:30 pm
Smithers 200

Instructor: Joshua Cohen, Ph.D.

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Office Hours: By appointment

I will make every reasonable effort to meet with students whenever necessary.

Rutgers University Mission: As the premier comprehensive public research university in the state's system of higher education, Rutgers, The State University of New Jersey, has the threefold mission of

- providing for the instructional needs of New Jersey's citizens through its undergraduate, graduate, and continuing education programs;
- conducting the cutting-edge research that contributes to the medical, environmental, social, and cultural well-being of the state, as well as aiding the economy and the state's businesses and industries; and
- performing public service in support of the needs of the citizens of the state and its local, county, and state governments.

Each component of the university's mission reinforces and supports the other two.

As the University of New Jersey®, Rutgers is dedicated to teaching that meets the highest standards of excellence, to conducting research that breaks new ground, and to providing services, solutions, and clinical care that help individuals and the local, national, and global communities where they live.

GSAPP Mission: The mission of GSAPP is threefold: education, research/scholarship, and public service. Its goal is to prepare well-educated, qualified, and competent direct-service psychologists who have a special commitment to direct community involvement and to underserved populations--professionals who can integrate scientific knowledge with innovation in the delivery of psychological services to individuals, families, groups, and organizations. Professionals receiving a doctoral degree in psychology should be capable of extending psychological knowledge and exhibiting the high level of analytic skills and theoretical understanding needed to use existing and emerging psychological knowledge.

Core Values. We are guided by four core values that are apparent in our learning environment, centers, and clinics:

1. **Academic excellence** in preparing students for careers in clinical and school psychology.
2. Commitment to **social justice** and helping **underserved populations**.
3. **Diversity** of students trained, approaches used, theoretical orientations followed, and populations served.
4. **Knowledge generation and dissemination** using contemporary research approaches.

Course Description/Overview:

In today's healthcare climate, psychologists are often required to serve beside medical personnel in integrated healthcare teams for assessment and treatment of complex cases. This course will prepare students for these interactions by providing them with a comprehensive overview of key aspects of biology that explain or otherwise interface with functional and dysfunctional behavior.

Scientific constructs, techniques, and theories will be examined in depth. Biological topics include the peripheral and central nervous system, the neurobiological systems that underlie sensation, motor behavior, emotion, cognition, self-other representation, and social behavior. We will also integrate understanding of altered behavioral processes of brain-injured and psychiatric patients with knowledge of basic neurobiological processes.

OBJECTIVES FOR THE COURSE:

After this course, you should be able to:

- Demonstrate an understanding of the neuron, brain organization, and functional neuroanatomy
- Understand the biological processes that underlie sensation, perception, memory, emotion, motor behaviors, language, and psychopathology
- Integrate basic biological processes with single case studies in neurology, neuropsychology, and clinical psychology
- Integrate understanding of neurobiological processes into understanding normal and abnormal mental and behavioral functioning
- Demonstrate verbal and written comprehension of basic biological concepts across all domains listed within the course content/schedule

Assignments and Evaluation Method:

Mid-Term Exam	20%
Final Exam (cumulative)	20%
Paper	20%
Attendance	30%
Homework	10%

Homework:

Rather than submitting a homework question each week prior to class, you will complete homework questions assigned by the instructor. These questions are based on the readings assigned for the upcoming class. Students can upload their homework to Canvas.

Grades and Grading Policy

Grade	Description	Numerical Equivalent
A	Outstanding	89.5 -100 (4.0)
B+	Intermediate Grade	87-89.4 (3.5)
B	Good	79.5-86 (3.0)
C	Average	69.5-79.4 (2.0) Grades of C do not count toward graduation
F	Failure	69.4 or below (0.0)
INC	Incomplete	
S	Satisfactory	
U	Unsatisfactory	
PA	Pass	
NC	No credit given	

Required Texts:

- Carlson, N.R., & Birkett, M.A. (2020). Physiology of behavior, 13th Edition. Boston, MA: Pearson.
- Quock (2022). Drugs and Behavior. 2nd Edition
 - see Canvas

It is okay to use older editions of the Carlson & Birkett text. The more recent the edition, the better.

Course Outline (subject to changes):

- Week 1 (5/15): Structure and Function of Cells of the Nervous System
- Assigned Readings
 - Carlson & Birkett Ch. 2 (Structure and Function of Cells)
- Week 2 (5/20) Structure of the Nervous System
- Assigned Readings:
 - Carlson & Birkett Ch. 3 (Structure of Nervous System)
- (5/22): Neurotransmitters and Psychopharmacology
- Assigned Readings
 - Carlson & Birkett Ch. 4 Psychopharmacology
- Week 5 (5/29): Neurodevelopmental Disorders
- Assigned Readings

- o Carlson & Birkett Ch 15

- Week 6(6/3) Neurological Disorders
- Assigned Readings
 - o Carlson & Birkett Ch. 16 Neurological Disorders
- (6/5) Emotion
- Assigned Readings
 - o Carlson & Birkett. Ch.11. (Emotion)
- Week 7 (6/10) Schizophrenia and Affective Disorders and Midterm Review
- Assigned Readings
 - o Carlson & Birkett Ch. 17 (Schizophrenia and Affective Disorders)

(possible half in-person/ half recorded lecture)
- (6/12): **Midterm Examination**
- Week 8 (6/17): Language and Aphasias
- Assigned Readings
 - o Carlson & Birkett. Ch. 14. Human Communication
- (6/19): Biology of Stress and Anxiety
- Assigned Readings
 - o Carlson & Birkett. Ch.18. Stress and Anxiety
- Week 9 (6/24): Assigned Readings / exam review
Birkett Ch. 19 (Substance Abuse)
Papers Due
- Week 13 (6/26): Final Exam

Research Paper

All students will be responsible for completing a research paper for the course. Students will select a topic based on the content of the course (e.g., a specific disorder). Papers should consist of the following components:

- A description of the disorder or other topic
- Specific discussion of the biological systems implicated
- Course of treatment of the disorder

Papers should be 6 to 10 pages (double-spaced, 12-point font), including references. In APA style. Please reference at least 4 peer reviewed journal articles.

Grading: Grades for the paper will be based on whether or not the components listed above were included. The papers are due on the last day of class. If the paper is submitted late, 25% of the grade will be subtracted.

Attendance and Participation:

Attendance and class participation are a major part of this class. You are expected to attend all classes and arrive on time. Please let me know ahead of time if you have to miss class or extenuating circumstances

Computer/Cell Phone Use in Class

If students are expected to send or receive urgent e-mails, texts, or calls during class, their unanticipated and urgent needs should be communicated to and approved by the instructor prior to class. All cell phones should be turned off or in silent mode. All computing devices should be used only for the purpose of class-related activities.

Academic Integrity

All Rutgers students should review and adhere to the University principles of academic integrity, available at: <http://academicintegrity.rutgers.edu/academic-integrity-at-rutgers/>
APA Citation Style. All papers MUST be written using the APA style (6 ed.).

Student Resources

For more information visit: <https://gsapp.rutgers.edu/current-students/important-links>
Accommodations due to Disability

If you seek accommodations due to a documented disability, you may arrange for these through the Office of Disability Services, Kreeger Learning Center, 151 College Avenue; dfoffice@rci.rutgers.edu or you can visit:

<https://ods.rutgers.edu/students/documentation-guidelines>.

Title IX: <http://compliance.rutgers.edu/resources/resources-for-facultystaff/>

Counseling services. Students often experience personal problems or difficulties during the term that may interfere with learning and their daily activities. If you or someone you know needs to talk to someone regarding such personal issues, the University provides free counseling services through the Counseling and Psychological Services (CAPS) and their information can be found at: <http://psychologicalservices.rutgers.edu>. They also offer a number of useful workshops for general stress management and techniques for promoting mental health. If you have any questions about CAPS or other services, I am happy to speak with you privately.