INTERAMERICAN UNIVERSITY OF PUERTO RICO
METROPOLITAN CAMPUS
FACULTY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF NATURAL SCIENCES

Syllabus

I. OVERVIEW

Course Title:	Neuroscience of Human Behavior
Course code and number:	BIPS 3900
Credits:	3
Academic Term:	
Professor:	
Office Hours:	
Office Phone:	(787) 250-1912
Email:	@intermetro.edu

II. DESCRIPTION

Discussion of the biological basis underlying human behavior with emphasis on neuroanatomy and neurochemistry. Analysis of neurophysiological processes related to vision, the auditory system, sleep, language production. Emphasis on the influence of different brain structures on emotional states, learning, memory and mental disorders. Requirement: BIOL 2100, BIOL 3106 and PSYC 1051.

III. OBJECTIVES

1. It is expected that at the end of the course, the student will be able to:
    1. Identify the set of knowledge that defines and articulates behavioral neuroscience as a scientific discipline.
    2. Identify the biological foundations of human behavior and psychological functions.
    3. Examine the ethical aspects related to neuroscientific research.
    4. Relate different structures of the nervous system with the main ones psychological processes.
    5. Relate theory and research evidence to knowledge produced by behavioral neuroscience.
    6. Explain human behavior by integrating different psychological and neuroscientific perspectives.

7. Critically and scientifically examine the concepts of neuroscience and behavior.
8. Identify the different approaches to the study of the brain and behavior.
9. Describe sleep and understand it as an active process.
10. Analyze complex functions such as learning, memory and intelligence from a neuroscientific perspective.
11. Explain how behavioral science contributes to the understanding of brain/behavior relationships.
12. Describe the neural basis of some neurological and psychological *disorders.*

The program is designed to develop the competencies that allow the student to gain the following competencies:

Knowledge

C1-Demonstrate basic knowledge of concepts, principles and theories related to biology and psychology.

C2- Integrate information from multiple sources in biology and psychology relevant to the study of human behavior problems.

Skills

D2-Properly use the equipment and materials relevant to the study of biopsychology.

D3- Apply the appropriate methodology in the solution of problems related to biopsychology.

Attitudes

A1- Demonstrate ability to make and implement informed and responsible ethical decisions.

A2- Recognize how decisions affect and are affected by other individuals separated in time, space and culture.

IV. THEMATIC CONTENT

Unit 1: Introduction to Behavioral Neuroscience

1.1. Conceptualization of behavioral neuroscience
1.2. Research methods in Behavioral Neuroscience
1.3. Integrative approach and socio-psycho-biological perspective of the brain

Unit 2: Functional neuroanatomy and the evolution of the nervous system

2.1 Neuroplasticity of the brain

Unit 3: Behavioral Neurophysiology

3.1 Structure and functions of the cells of the nervous system

Unit 4: Genetics and Human Brain Development

4.1 Genetic basis of behavior
4.2 Changes in the brain during development

Unit 5: Visual System and Visual Perception

5.1 From sensation to perception: elements of visual perception
5.2 Structure and functions of the visual system
5.3 Visual system disorders

Unit 6: Movement

6.1 Neural control of muscles
6.2 Reflex control of movements
6.3 Motor systems of the brain
6.4 Movement disorders

Unit 7: Hearing: Structure and Function of the Auditory System

7.1 Auditory perception
7.2 Hearing disorders

Unit 8: Learning and Memory

8.1 Brain structures related to learning and memory
8.2 Biochemistry of memory

Unit 9: Language and Intelligence

9. 1 Hemispheric asymmetry and how it correlates with behavior
9. 2 Brain mechanisms of language
9. 3 Most common language disorders
9. 4 Structural and functional correlates of the brain and intelligence

Unit 10: Emotion, Motivation and Stress

10.1 Biological structures associated with emotions
10.2 Genetics, environment and epigenetics of aggression
10.3 Biochemistry of aggression
10.4 Stress, the immune system and general health

Unit 11: Neurocognitive disorders

11.1 Alzheimer's
11.2 Vascular disease
11.3 HIV-associated neurocognitive disorders
11.4 Treatment of neurocognitive disorders

Unit 12: Psychopathology

12.1 Schizophrenia: genetic contribution
12.2 Structure and functions of the brain in: Schizophrenia, disorder

Bipolar and depression
12.3 Biochemistry of schizophrenia, bipolar disorder and depression

V. CALENDAR

It will be discussed in class and a copy will be placed on Blackboard.

It is important that you fill out the receipt of syllabus discussion on Blackboard.

VI. ACTIVITIES

A. Conferences
B. Group presentations
C. Discussion of assigned readings
D. Literature review work

VII. EVALUATION

The evaluation of the course will be based on the execution of the partial exams, final exam, group presentation and the laboratory.
The final grade will be calculated on a 100% basis as follows:

Component	Description
3 partial exams Course topic monograph Attendance* and participation	300 points 100 points 100 points TOTAL 500 points
* Attendance will be rated as follows: 1 absence = 95% 2 absences = 90%TOTAL 3 absences 85%	

VIII. SPECIAL NOTES

A. **Ancillary services or special needs**
Any student who requires auxiliary services or special assistance must request them at the beginning of the course or as soon as they acquire knowledge that they need them, through the corresponding registration, in the Orientation Office with Dr. María de los Ángeles Cabello, Coordinator of services to students with disabilities, office 111, ext. 2306.

B. **Honesty, fraud and plagiarism**
Dishonesty, fraud, plagiarism and any other inappropriate behavior in relation to academic work constitute major infractions sanctioned by the General Student Regulations. Major infractions, as provided for in the General StudentRegulations,

may result in the suspension of the University for a defined period of more than one year or the permanent expulsion from the University, among other sanctions.

C. **Use of electronic devices**
Cell phones and any other electronic device that could interrupt teaching and learning processes or alter the environment conducive to academic excellence will be deactivated. Pressing situations will be addressed, as appropriate. The handling of electronic devices that allow access, storage or sending data during evaluations or exams is prohibited.

D. **Compliance with the provisions of Title IX**
The Federal Higher Education Act, as amended, prohibits discrimination on the basis of sex in any academic, educational, extracurricular, athletic, or any other program or employment, sponsored or controlled by an institution of higher education regardless of whether it is conducted on or off the institution's premises, if the institution receives federal funds.

In accordance with current federal regulations, our academic unit has appointed a Title IX Assistant Coordinator who will provide assistance and guidance regarding any alleged incident constituting discrimination based on sex or gender, sexual harassment or sexual assault. You can contact the Assistant Coordinator at the telephone Mr. George Rivera,extension 2262 or 2147,oremail griverar@metro.inter.edu.

The Normative Document entitled **Norms and Procedures to Address Alleged Violations of the Provisions of Title IX** is the document that contains the institutional rules to channel any complaint that is filed based on this type of allegation. This document is available on the website of the Inter-American University of Puerto Rico

IX. BIBLIOGRAPHY

Textbooks

A. Freberg L. (2014). Discovering Behavioral Neuroscience: An introduction to biological psychology. Cengage Learning: Boston.
B. Further Reading
C. Carlson, N.R. (2006). The Physiology of Behavior, 9th Edition. Allyn and Bacon Publishers: Boston, Massachusetts
D. Ebert, B., Wafford, KA. & Deacon, S (2006). Treating insomnia: current and investigational pharmacological approaches. Pharmacological Therapeutics 112(3):612-629.
E. Watson, N.V. and M.R. Rosenzweig, M.R. (2010). Biological Psychology. Sixth Edition. S.M. Breedlove: New York.
F. Bear, M.F., Connors, B.W. and Michael A. Paradiso (2015). Neuroscience - Exploring the Brain, 3rd Edition.
G. Kolb, B. and Whishaw, I. Q. (2006). An Introduction to Brain and Behavior: Chapter 2: How is the Brain organized?
H. Lyons, M., Harrison, N., Brewery, G. and R. Sanders (2014). Biological Psychology. Learning Matters.

Other resources:

1. Structure and functioning of the Central Nervous System https://www.youtube.com/watch?v=0+IegH34r40
2. Biological basis of behavior-the brain
   http:// www.educatina.com/psicología/bases-biologicas-de-la-conducta/la-neuropsychology-the-brain-video
3. Psychophysiology: characteristics and functions of the periferal nervous system
   http:/www.educatina.com/psicología/bases- biológicas- de- la conducta/psicofisiologia-caracteristicas y funciones-del-sistema-nervous-periferico- snp-video
4. Genetics, evolution and behavior
   http://www.educatina.com/psicologia/bases-biologicas-de-la-conducta/genes-theevolution-and-the-behavior-of-the-people-video.
5. Churchland, Patricia Smith. 1989. Neurophilosophy: Toward a Unified Science of the Mind-Brain.Cambridge: Massachusetts Institute of Technology.
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7. Bickle. John. 2009. The Oxford Handbook of Philosophy and Neuroscience. Oxford: Oxford University Press.
8. McLaughlin, Brian P.; Beckermann, Ansgar and Walter, Sven. 2008. The Oxford Handbook of Philosophy of Mind.
9. Belichon Carmona, Mercedes; Igoa González, José and Rivière Gómez, Ángel. 1996. Psychology of language: Research and theory. 3rd Edition. Madrid: Editorial Trotta.
10. Armony, Jorge and Vuilleumier. 2013. The Cambridge Handbook of Human Affective Neuroscience. Cambridge: Cambridge University Press.
11. Corr, Philip J. 2006. Understanding Biological Psychology. Malden: Blackwell Publi

NOTE: THE PAST RECORD MAY BE SUBJECT TO CHANGE AS UNDERSTOOD BY THE PROFESSOR.