PSYC-107: PSYCHOBIOLOGY

Also listed as: PSYC-107H

Effective Term
Fall 2023

BOT Approval Date
06/23/2022

Discipline
PSYC - Psychology
Course Number
107

Course Title
Psychobiology

Short Title
Psychobiology

Credit Status (CB 04)
D - Credit - Degree applicable

Units

Lecture Units
3.00

Total Units
3.00

Hours

Lecture Contact Hours
48-54
Out of Class Hours Lecture
96-108

Total Contact Hours
48 - 54

Total Out of Class Hours
96 - 108

Total Student Learning Hours
144 - 162

Distance Education
Yes

Distance Education

Distance Education Type
Both Fully Online and Hybrid Online

Does the DE also apply to the Honors section?
Yes

Honors component will meet synchronously (face-to-face or moderated through online technology such as Zoom)

Fully Online Delivery Requirements:
a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course
b. Any planned face-to-face meetings, such as an orientation or study session, must be optional
c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods: • Orientation - Students must be oriented to the online and face-to-face portions at the start of the course. • Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc. • Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction. • MSJC Communication – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students. • Timely Feedback - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS. • Scheduled Meetings – Hybrid and synchronous courses will meet at regularly scheduled times. ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Additional Regular Substantive Interaction

Grading Comments - Students may receive individual feedback on assignments.
Email or Course Message System - Students may seek out instructor guided assistance for any portion for the course via email or by way of a course messaging system within the CMS.

Honors / Non-honors

PSYC-107H

C-ID (Admin Only)

C-ID PSY 150

CB 00

CCC000633255

Course Title

Honors Psychobiology

Approved Cal-GETC Area

AREA-4

Approved Second Cal-GETC Area

Approved Third Cal-GETC Area

C-ID (Admin Only)

C-ID PSY 150

Catalog Description

This course introduces students to the biological and physiological processes associated with the brain, behavior, and related psychological processes. The course will examine the nervous system, sensation, perception, emotion, clinical symptoms of abnormal behavior, sleep, learning, drug effects and other areas related to psychobiology.

Requisites

Prerequisite(s)

Prerequisite(s) (must be taken before)
PSYC-C1000 (with a grade of C or better).

Codes

TOP Code (CB 03)

2099.00 - Other Psychology

CIP Code

42.2706 - Physiological Psychology/Psychobiology.

Repeatability Code

No

Grading Option

Letter grade OR P/NP

GE Information

Check GE Types Requested

AA/AS B2 - Social & Behavioral Sciences

Cal-GETC Areas

Approved Cal-GETC Area

AREA-4

Learning Objectives

Learning Objectives

Learning Objective
1. Define and use basic biological, physiological, and psychological terminology of the neurosciences.
2. Explain and define all of the major anatomical components and corresponding functions and processes relevant to biopsychology, including those within the nervous system, sensory systems, reproductive systems, endocrine system and other systems pertinent to understanding the relationship between biology and human behavior.
3. Differentiate the subdivisions of the nervous system and analyze the processes and components involved in neural conduction, transmission, and neural communication including an analysis on the impact on behavior and psychological functioning.
4. Explain and analyze various brain-behavior relationships including internal regulation and ingestive behavior; sexual development and behavior; sleep and consciousness; learning, language, memory, and other cognitive behaviors; motivation and emotional responses; stress and illness; the mechanisms and effects of psychoactive drugs and drug dependence; and physical, cognitive, and socioemotional development; sensation, perception, and movement.
5. Evaluate current concepts regarding the etiology experience, and treatment of various mental and behavioral disorders.
6. Identify the interactive roles of human evolutionary theory, genetics, and behavior, including an exploration of epigenetics and the impact of experience on genetics and other biological processes.
7. Analyze the various research methods used in biological psychology and neuroscience, including invasive and noninvasive research approaches and the corresponding ethical considerations for human and animal research.
8. Differentiate among specialty areas within biological psychology and the related disciplines within the Neurosciences.

9. Carefully examine scientific racism, and consider the ways in which psychobiology, neuroscience, and other related sciences may have historically excluded, marginalized, or otherwise exploited communities of color in areas such as eugenics, Darwinism, intelligence, pain perception, drug addiction, and other areas related to the field.

10. Critically analyze the dynamic interaction between diverse biological, physiological, psychological, social and cultural factors that influence human behavior.

11. Analyze primary source research articles from professional journals describing biopsychological research.

12. Apply findings from biopsychology to their own life and explain how research findings may apply to their own beliefs, attitudes, and behavior.

Honors Objectives

Specific Honors Objectives include:

1. Develop independent research, learning, and presentation skills through advanced research on topics related to psychobiology, including those that may allow students to better understand how terms and concepts apply to their own lives and allow them to better understand human behavior.

2. Explore modern advances in the field including areas such as biotechnology, stem cell applications, brain plasticity, artificial intelligence, genetic research, and other innovative approaches to studying psychobiology, neuroscience, and other related fields.

3. Explore various research and career opportunities in the fields of psychobiology and neuroscience.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome
1. Analyze and evaluate research in the field of biopsychology and neuroscience to better understand the neural and biological foundations of behavior.
2. Critically analyze biological and physiological processes involved in the symptoms, etiology, and treatment of psychological disorders, and other psychobiological conditions.
3. Create proposals, projects, or research papers that demonstrate the complexity and diversity of biopsychological functioning and the dynamic interaction of factors that impact motivation and emotion and overall psychological functioning.

Program Learning Outcomes

Learning Outcome
1. Students will generate ideas that apply social science principles, reflecting the diversity of the human experience with a sense of creativity, imagination, innovation, wonderment and awe.
2. Students will integrate learning from psychology with their existing knowledge, and determine how they might assimilate new information into existing schemas, and/or accommodate mental structures in order to generate new mindsets or paradigms.
3. Students will illustrate healthy self awareness and metacognitive abilities, which demonstrate their commitment to persist in their current and lifelong learning pursuits.
4. Students will design projects or research studies illustrating their ability to question ideas, think critically and flexibly, and formulate sound decisions based on their analysis, while integrating appropriate psychological principles, theories, and/or methodology.
5. Students will produce arguments or projects that apply psychological training, while demonstrating their ability to listen to others with understanding and empathy, and think interdependently.

Institutional Learning Outcomes

Communication: The student will effectively express and exchange ideas through listening, speaking, reading, writing, visual works, and other modes of interpersonal expression.
Critical Thinking: The student will analyze problems, gather and synthesize relevant information, evaluate ideas, information, and evaluate alternative points of view to create, innovate and implement effective solutions.
Cultural Awareness and Humility: The student will demonstrate knowledge of and sensitivity toward individuals of diverse ethnicity, age, gender, sexual orientation, and religious affiliations, as well as toward those individuals with diverse abilities and socio-economic classes to respectfully interact with individuals of diverse perspectives, beliefs and values while being mindful of the limitation of their own cultural frameworks.
Information and Technology Literacy: The student will access, interpret, evaluate, and apply relevant information sources and digital media effectively, and in an ethical and legal manner.
Scientific Awareness: The student will apply the scientific method of inquiry to assess potential solutions for real-life challenges by employing science-based knowledge and methodologies in daily life.

Social Awareness: The student will recognize and analyze the interconnectedness of global, national, and local concerns, analyzing cultural, political, social, and environmental issues from multiple perspectives and appreciate similarities and differences among cultures.
Civic
Personal
and Professional Responsibility

Content

Course Lecture Content

1. Defining Psychobiology and the various subfields
    a. History of the field
    b. Related Disciplines
2. Research methodology and techniques utilized in psychobiology and neuroscience, including ethical considerations
    a. Scientific and Non Scientific Research Methods
    b. Research Ethics applied to humans and animals
    c. Invasive and Noninvasive Techniques
    d. Historical examination of examples that illustrate scientific racism, bias, and prejudice within the field and related disciplines
3. Genetics and Behavior
    a. DNA
    b. Behavioral Genetics
    c. Interaction between genes and behavior
    d. Environmental, Social, and Cultural Influences on Genetics
        i. Epigenetics
4. Anatomy & Physiology of the Nervous System and Related Functions
    a. General layout of the nervous system
    b. Cells of the nervous system
    c. Neuroanatomical directions
    d. Evolution of the brain and nervous system
    e. Spinal cord
    f. Major divisions of the brain
    g. Major structures of the brain
    h. Development and plasticity of the brain
5. Neural Conduction and Synaptic Transmission
    a. Neuron's resting membrane potential
    b. Generation and conduction of postsynaptic potentials
    c. Integration of postsynaptic potentials and generation of action potential
    d. Conduction of action potentials
    e. Synaptic transmission: chemical transmission of signals among neurons
    f. Neurotransmitters
    g. Pharmacology of synaptic transmission
6. Mechanisms of Sensation and Perception
    a. Principles of sensory system organization
    b. Cortical mechanisms of vision
    c. Audition
    d. Somatosensation: touch and pain
    e. The chemical senses: smell and taste
7. Motor Functioning
    a. Types of muscles and neural control of muscles
    b. Reflexes

   c. Motor systems of the brain
   d. Disorders of movement
8. The Psychobiology of Eating and Drinking
   a. Digestion and energy flow
   b. Theories of hunger and eating: set points vs. positive incentives
   c. Factors that determine hunger
   d. Neural mechanisms of hunger and satiety
   e. Body weight regulation
   f. Psychological, Social and Cultural Factors that contribute to individual differences and cultural differences that impact risks for eating disorders.
9. Hormones, Sexual Development, and Sexual Behavior
   a. The neuroendocrine system
   b. Prenatal Development
   c. Hormones and sexual development
   d. Effects of gonadal hormones on adults
   e. The hypothalamus and sexual behavior
   f. Sexual orientation, hormones, and the brain
   g. Variations of sexual development and the diversity of sex, gender, and sexual identities
   h. Social and cultural influences on sexual development and one's own sense of sexual identity, health, and empowerment
10. States of Consciousness, Sleep, Dreaming, and Circadian Rhythms
   a. Mechanisms of consciousness, awareness, and attention
   b. Selective attention
   c. Physiological and behavioral correlates of sleep
   d. REM sleep and dreaming
   e. Why we sleep
   f. Circadian sleep cycles
   g. Effects of sleep deprivation
   h. Recuperation and circadian theories of sleep
   i. Neural mechanisms of sleep
   j. Hypnotic and anti-hypnotic drugs
   k. Sleep disorders
11. Psychoactive Drugs and Addiction
   a. Types and classifications of drugs
   b. The effects of psychoactive drugs
   c. Psychotropic medications
   d. Biological mechanisms of addiction
      i. Interconnections between Biological, Environmental, Psychological, Social, and cultural factors that impact addiction and options for treatment
12. Learning and Memory
   a. Types of Memory
   b. Brain Structures involved in learning and memory
   c. Long term potentiation
   d. Amnesia, Dementia and Alzheimer's
   e. Cultural bias and Testing bias as it relates to theories of learning and intelligence
13. Lateralization, language. and the split brain
   a. Lateralization of function: methods and basic findings
   b. The split brain Differences between the left and right hemispheres
   c. Cortical localization of language
14. Neurological Disorders

a. Seizures and epilepsy
b. Parkinson's Disease
c. Multiple Sclerosis
d. Strokes

15. Psychobiology of emotion and motivation.
    a. Theories of Motivation and Emotion
    b. Fear, defense, and aggression
16. Stress, mental illness, and health
    a. The dynamic interaction between biology and psychology that affects overall health
    b. Autonomic Nervous System and the Stress Response
    c. Stress and health
    d. Psychological Disorders
        i. Schizophrenia, Affective disorders: depression and mania, Anxiety disorders, Eating Disorders, and other related disorders
        ii. Bias in diagnosis and treatment processes
        iii. Cross cultural differences in symptomology, perceptions, stigma, definitions, and treatments for psychological disorders
        iv. The role of cultural humility and competency in treatment of psychological disorders in addition to biological interventions

Honors Content

The course content will be the same as that covered within the Psych 107 course, but honors students will be required to complete supplemental assignments aimed at more detailed application and analysis of the information and topics discussed in Psych 107. Specifically, honors students will be expected to engage in a more in-depth research assignment allowing them to develop appropriate research skills critical to understanding the scientific processes inherent in psychobiology. Supplemental assignments will be related to critical psychobiological concepts, and the application of those concepts. Such topics may include a more detailed examination of the physiology of learning, perception, memory, brain and nervous system functioning; psychological disorders; development; sexual behavior; or other relevant psychobiology topics. In addition, modern advances in biotechnology such as the development of artificial visual systems, the repair of the brain, and artificial intelligence can be explored.

Methods of Instruction

Method

Lecture

Integration

Lecture, with supporting visual materials (Powerpoint, white board notes), will present concepts, methods, structures, and processes related to biopsychology.

DE Adaptations for MOI

Lectures will be posted in an electronic format within the CMS, with appropriate closed captioning and other accessibility requirements needed.

Method

Film/video Viewing and Discussion

Integration

Audio-visual materials will be utilized to enhance students' learning experiences as part of a cohesive review of the various topics that apply to Psychobiology. Case histories and psychobiological pathologies and other relevant information may be presented through video. Video clips and films allow students to observe psychobiological methods, processes, and human behavior in a variety of settings and contexts allowing students to observe and assess other individual, social, cultural, and environmental influences on human behavior and psychological functioning.

DE Adaptations for MOI

Video clips, and links to video material, will be posted in the CMS with closed captioning.

Method

Papers and Reports

Integration

(Required) Students will be taught APA guidelines and research methods used to examine psychobiology. Instructors are required to offer at least one assignment applying those guidelines through an assignment related to critically analyzing empirical research and/or conducting a literature review.

DE Adaptations for MOI

Students can complete the papers and submit them in digital format within the CMS. Efforts can also be made to check for plagiarism through the use of a plagiarism checker provided through the CMS or college.

Method

Discussion

Integration

Discussion can be utilized to help students evaluate critical course content, as well as identify and demonstrate a critical awareness of race, cultural diversity, and equity as it relates to understanding the dynamic relationship between brain, biology, physiology, behavioral, and psychological functioning.

DE Adaptations for MOI

Online discussions will be facilitate using teleconferencing or online discussion forums within the CMS.

Method

Field Trips

Integration

Students can visit labs and other treatment facilities, hospitals and research facilities, and other professional environments focused on psychobiology either in person or virtually when available. Students can then submit a written reflection applying key terms, concepts, theories, and other processes which apply to their field observation and experience.

DE Adaptations for MOI

Students will submit a written reflection and submit in electronic format to the CMS.

Method

Reading

Integration

Students will read chapters from the textbook, articles, case studies, and other materials that help illustrate the concepts, themes, structures and processes relevant to understanding Psychobiology.

DE Adaptations for MOI

Instructions to access textbook reading, or electronic course materials will be posted within the CMS.

Method

Service Learning

Integration

Students may be given the opportunity to engage in community work within organizations focused on psychobiology in order to gain important experience that allows them to apply biopsychological concepts and theories to their own lives, as well as considering social and cultural influences that may contribute to individual differences in behavior and psychological functioning. Upon completion of their community work, they can connect their experiences back to course content evidenced by a paper, presentation, discussion, or other creative project that demonstrates their learning.

DE Adaptations for MOI

Assignments reflecting on service learning experiences will be submitted through the CMS in an appropriate and accessible format, and/or shared with peers through Discussion Forums.

Method

Lab Activities

Integration

Students can conduct labs and dissections relevant to helping them understand biological structures and processes that relate to behavior and psychological functioning including brain dissections, eye dissections, action potential labs, biofeedback labs, and other hands on activities that allow them to better understand the content.

DE Adaptations for MOI

Digital dissections, or observations, and labs can be provided within the CMS, or by way of supplemental publisher lab activities.

Method

Visiting Lecturers

Integration

Guest speakers may be invited to offer lectures on specialized areas or practices related to biopsychology in order to enhance student learning and offer them exposure to various applications within the field.

DE Adaptations for MOI

Guest Speakers can join online classes via ZOOM. It can be synchronous or asynchronous. Instructors may also elect to post videos/ media interviews of guest speakers with closed captioning.

Method

Group Projects

Integration

Students will experience group processes and dynamics through grow projects and collaborative activities that allow them to work with meaningful and relevant content related to psychobiology. Furthermore, this approach allows students further opportunity to gain greater awareness of individual, social, and cultural diversity in order to better understand human behavior and psychological functioning.

DE Adaptations for MOI

Group Projects can be facilitated through the Groups features within the CMS and all final products and work product can be submitted in electronic format through the CMS with appropriate options for peer discussion and feedback.

Additional Methods of Instruction for Honors

1. Professor and student meetings will occur on a regular basis, but no less than three times over the course of the semester. Meetings can be with an individual honor student, or can include group meetings with all honor students in that class. Meetings can be used to discuss the specifics of the class, such as the various required honors and course assignments. Additionally, the meetings can be used to facilitate discussions about readings and other content items, and opportunities to offer continued feedback and guidance on honors projects. Finally, the meetings can also address any and all issues pertinent to the student and college life, including career options, university transfer information, or other relevant discussions. Meetings can be held in person or via an online video conferencing tools if needed for online meetings.

2. Instructor may also consider integrating field trips for Honors students aimed at exploring exhibits or labs which are researching or applying theories and concepts related to biopsychology, or other related issues. Examples may include visiting the neuroscience lab at UCR and UCSD. Field trips can be in person or facilitated via virtual tours and events for online courses as needed.

3. Instructor may provide instruction and guidance for Honors students in the preparation of literature reviews, and other empirical based writing assignments for experimental and nonexperimental studies that allow the students to gather, analyze, synthesize, and summarize relevant research on a given topic and potentially develop original research to expand their understanding of such topic in accordance with APA ethnical standards and guidelines. These types of instructions can be provided via recorded lectures posted online in the CMS with appropriate closed captioning, or via video conferencing options for online courses.

4. Instructor may also support student learning through working with students on applied activities and assignments that allow them to demonstrate their learning through things such as awareness campaigns, marketing campaigns for relevant facilities and labs, presentations on diagnostic and treatment methods used within the field, or other related activities that demonstrate the various ways in which the concepts from the course are applied within relevant fields of practice. All such activities can be facilitated virtually via video conferencing, or videos and resources can be submitted through the CMS with appropriate accessibility features including closed captioning as needed.

Methods of Evaluation

Method

Exams/Tests

Integration

Exams may be given as multiple choice, short answer, or essay exams, with the intent of evaluating students' comprehension and/or application of course material. Exams/Tests will be evaluated based on how accurately the student is able to apply appropriate terminology, correctly identify critical anatomical structures and functions of the brain, nervous system and other biological systems that affect psychological functioning, and accurately explain the biological components and processes underlying brain functioning and human behavior.

DE Adaptations for MOE

The tests and final exam may be proctored at an authorized testing center, or administered directly through the CMS. Furthermore, essay exams can be submitted through a plagiarism checking resource provided by the CMS or the college.

Method

Class Participation

Integration

Class participation will be utilized to assess student learning of relevant psychobiological topics, and allow students to examine and describe the components of related concepts, terms, theories, structures, and processes observed within Psychobiology. Student participation will be evaluated based on their ability to accurately explain brain-behavior relationships and apply concepts and findings to their own lives and behavioral analysis, while considering the ways in which our own unique lived experiences, and social and cultural backgrounds, may also impact the diversity of human behavior and perspectives.

DE Adaptations for MOE

Discussion forums and blogs within the CMS can be utilized to assess class participation in asynchronous courses and video conferencing tools can be utilized for synchronous online course meetings (i.e. CCCConfer, Zoom, etc.).

Method

Research Projects

Integration

Research Projects will be utilized to evaluate students' ability to synthesize research and knowledge gained from scholarly sources through their ability to complete a comprehensive analysis of an issue related to psychobiology. Research projects will be evaluated based on the student ability to clearly demonstrate their ability to critically analyze relevant scientific research, including primary sources, and accurately explain the ways in which that research helps to better understand psychobiological functioning. Furthermore, students will need to critically analyze where the field may have marginalized or excluded specific racial and social groups within psychobiology and science overall as it relates to their particular research topic.

DE Adaptations for MOE

Written projects will be submitted through the CMS with appropriate plagiarism checks, and/or posted within threaded discussions.

Method

Group Projects

Integration

Students can work together to analyze a particular psychological disorder or other psychobiological concept or process and any related topics, concepts, or theories related to the topic. Groups can then work together to prepare a group paper or presentation for the class. This work can be evaluated through a written self or peer reflection, in addition to the instructor's evaluation of the accuracy of the content and the student's ability to apply the psychological theories and concepts discussed to the topic at issue. Such projects will be evaluated by assessing the accuracy with which students/groups are able to explain the etiology, experience, and treatment of various mental and behavioral disorders and relate the learning to their own personal experiences taking care to note cross cultural differences in their views of and responses to mental illness.

DE Adaptations for MOE

Students can self select into groups or be assigned into groups via the Course Management System. They can use collaborative online tools such as Skype, Zoom, and other mechanisms to work together on the construction of the presentation and use a variety of electronic options to deliver the presentation to the course, which can be uploaded through the CMS. Students can then comment on other presentations through a Discussion Forum and offer each other feedback and critique, or they can vote on presentations.

Evaluation of Honors assignments

Honors students will be evaluated on the basis of successful completion of regular course work and honors supplemental assignments.

Literature reviews, and other empirical based writing assignments, will be analyzed based on accuracy with which the research is summarized, relevance and integration of references, the scope with which multiple sources representing varied perspectives are integrated, accuracy of content, insight and originality of the work, the synthesis of information and the critical analysis of thee relationships between sources, and accordance with APA formatting guidelines. Furthermore, consideration should be given to the quality of the writing to ensure that it meets standards of college level writing.

Correlational and experimental studies will be assessed according to the quality of the hypothesis, execution of the research, and adherence to APA in the presentation of the research proposal and/or findings.

Applied activities (e.g., awareness campaigns, tours of lab facilities and the like) will be assessed based on the proper application of methods and processes, insight and originality of the work, and critical analysis of how those issues affect other areas of psychological functioning.

Presentations and papers will be assessed for clarity, quality of writing, depth and accuracy of content, organization, and relevance to psychological functioning.

Papers and presentations on either interviews of biopsychological or neuroscience professionals, or visits to related psychobiology labs, institutions, or exhibits, will be assessed based on the depth to which the content was explained and connected back to theories, concepts, or related careers within the field of psychobiology.

Assignments

Assignment Type

Writing

In-class and/or outside of class

In-class
Outside of class

Formative or Summative

Summative

Assignment

Article review - locate, examine, and/or write a review of an empirical article or create a literature review synthesizing multiple empirical studies on a topic related to psychobiology.

How assignment will be adapted in online format
Reviews will be submitted in electronic format via the CMS. Instructor feedback and grading will be posted in the CMS in a timely manner.

Assignment Type
Reading

In-class and/or outside of class
In-class
Outside of class

Formative or Summative
Formative

Assignment
Read the chapter or empirical article that corresponds to the psychobiological concepts being addressed this week, and answer corresponding questions in order to assess your understanding of the content.

This week, in addition to the chapter related to Neurocognitive Disorders, you will be reading the following article:
Ribaric, S. (2022). Physical exercise, a potential non-pharmacological intervention for attenuating neuroinflammation and cognitive decline in Alzheimer's Disease patients. International Journal of Molecular Sciences, 23, 3245. 1 - 37. doi.org/10.3390/ijms23063245.

Please be sure to take detailed notes of your reading and write down any questions you may have, or points of interest you wish to bring back to class discussions of this content.

How assignment will be adapted in online format
Instructions for textbook reading, and or electronic postings of supplemental reading will be provided within the CMS. All assignments or papers corresponding to the reading assignment will be submitted in electronic format within the CMS. Instructor feedback and grading will be posted in the CMS in a timely manner.

Assignment Type
Writing

In-class and/or outside of class
In-class
Outside of class

Formative or Summative
Summative

Assignment
Analyze scholarly research by locating primary empirical studies on a psychological disorder and prepare a written summary of your findings that discusses the biological factors that contribute to the etiology and effective treatments of the disorders. Possible research topics may include, Schizophrenia, Somatoform Disorders, Stress Disorders, Anxiety Disorders, Sexual Dysfunction, Mood Disorders, other related topics.

How assignment will be adapted in online format
Research papers can be submitted electronically via the CMS. Instructor grading and feedback will be provided within a timely manner within the CMS.

Assignment Type
Writing

In-class and/or outside of class
In-class

Outside of class

Formative or Summative

Summative

Assignment

Interactive Lab Activities - Upon reviewing all of the relevant content on the structure and function of brains, dissect the brain, or use brain models that allow you to label and explain the functions of key brain structures including the following:
Each of the brain hemispheres.
Each of the brain lobes
The Motor Cortex
Wernicke's Area
Broca's Area
The Cerebellum
The Hypothalamus
The Hippocampus
Other related structures.

How assignment will be adapted in online format

Virtual dissections and lab activities will be made available via the CMS or through the use of publisher labs when appropriate.

Assignment Type

Reading

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Research a diverse historical figure that has contributed the field of psychobiology and the neurosciences and prepare a paper or presentation conveying your findings. In addition to providing a brief biography and explaining their contribution to the field, consider the biases and barriers they may have faced in their personal and professional lives. Also, consider the impact of their work on diverse communities and how it may contribute to greater representation and inclusion within the sciences.

Through researching these figures, students will be able to gain important knowledge and perspectives about people from different cultures or groups with which they may have limited familiarity, gaining a greater appreciation for diversity and broadening their understanding for scientific work and figures beyond those represented in typical textbooks.

How assignment will be adapted in online format

Students can submit assignments in an electronic format through the CMS, and submit all materials through the plagiarism checker as appropriate.

Honors Assignments

Assignment

The Student is Required to Do EITHER The Empirical Research OR TWO of the Optional Activities Noted Below.

Required or Optional

Required

Honors Core Values

Academic Rigor and Research

Justify how the assignment reflects the Academic Rigor and Research Core Value

This ensures that the student is meeting the expectations of rigor consistent with the core values of the Honors Program.

Assignment

1. Conduct your own Empirical Research by designing and conducting a nonexperimental or experimental research study on a topic related to psychobiology. For example, conduct research to investigate if there are differences in physiological responses to stress for extroverts compared to introverts. Write a research paper (9 - 12 pages in body), presented in APA style, that includes related research, your methods and data analysis, your own conclusions, with a minimum of five peer reviewed empirical sources. APA researcher posters and presentations may also be considered. Be sure to address all ethical issues relevant to your study.

For online courses, empirical research proposals/paper will be submitted in digital format through the CMS with plagiarism checks as needed.

Required or Optional

Optional

Honors Core Values

Academic Rigor and Research
Engagement

Justify how the assignment reflects the Academic Rigor and Research Core Value

Conducting primary research allows students not only to learn about the scientific method, but also apply those methodologies through designing and conducting their own study.

Justify how the assignment reflects the Engagement Core Value

This applied approach also allows students to engage the content in a more applied way fostering a deeper understanding of the content, as well as promoting engagement with others through the process of collecting data. Finally, it also inspires additional engagement with the faculty member who is guiding and supporting the student through the development of the materials and data analysis, needed for this assignment.

Assignment

2. Attend a lecture; visit a research lab, exhibit, or treatment facility that utilizes the diagnostic or research methods and devices discussed in the class; or interview a professional in one of the related fields, and prepare either a paper or presentation sharing your observations, experiences, and learning from this activity. You may want to consider describing the equipment from a perspective that may not have been fully captured in the content, and highlight those things that we may not be readily available to us as students. Your paper and/or presentation should adhere to APA guidelines, be at least 5 to 6 pages, or 20 minutes, and include at least three other scholarly sources.

For online courses, virtual visits or lab attendance is acceptable. Papers and presentations will be submitted in digital format through the CMS with plagiarism checks as needed.

Required or Optional

Optional

Honors Core Values

Engagement

Justify how the assignment reflects the Engagement Core Value

This activity not only allows the student to engage with the content in a meaningful way, but also helps them to engage with other facilities or departments within the field in order to enhance their understanding of psychobiology, neuroscience, and other related fields.

Assignment

3. Prepare a paper on the brain or other biological organ, system, or process relevant to psychological functioning. For example, you may pick a part of the brain. Describe its function, and possible dysfunctions, drug effects, how it affects your body, and any other variations or effects. Write a paper (5 - 6 pages in main body), including your own illustrations and graphics, and cite a minimum of three peer reviewed empirical studies relevant to your topic.

For online courses, papers will be submitted in digital format through the CMS with plagiarism checks as needed.

Required or Optional
Optional

Honors Core Values
Academic Rigor and Research

Justify how the assignment reflects the Academic Rigor and Research Core Value
This assignment allows students to engage with additional research to study key biological systems involved in human behavior.

Assignment
4. Develop a presentation to the class, or for another venue such as a student conference, on any topic that relates to concepts from the class. Present this lecture, demonstration, group exercise, etc. to the class, or other respective audience. For example, arrange a presentation that presents stem cell advantages and controversies. The presentation should follow APA guidelines, be at least 20 minutes in length, and include at least three peer reviewed scholarly sources.

For online courses, presentations will be submitted in digital format through the CMS with closed captioning as needed.

Required or Optional
Optional

Honors Core Values
Leadership

Justify how the assignment reflects the Leadership Core Value
This assignment provides students the opportunity to lead class discussions and activities related to their presentations.

Assignment
5. Describe a life situation (getting married, falling in love, taking an exam, getting robbed, etc.). Describe, in detail, the psychobiological responses, and how to best cope with these psychological and physiological changes in order to promote physical and psychological well-being. Write a paper (5 - 6 pages in main body), including your own illustrations and graphics. Cite a minimum of three research articles relevant to your topic.

For online courses, papers will be submitted in digital format through the CMS through a plagiarism checker as needed.

Required or Optional
Optional

Honors Core Values
Holistic Well-being

Justify how the assignment reflects the Holistic Well-Being Core Value
This assignment requires students to reflect on life experiences that may stimulate a psychobiological response and consider healthy coping mechanisms that can promote physical and/or psychological well-being.

Course Materials

Textbooks
Pinel, P.J. (2021). Biopsychology 11th Edition. Pearson. ISBN: 978-9780135870815
Kalat, J. (2019). Biological Psychology 13th Edition. Cengage. ISBN: 978-1337408202
Freberg, L.A.. (2019). Discovering behavioral neuroscience: An introduction to biological psychology 4. Cengage Learning, Inc.
Garrett, B., & Hough, G. . 2018. Brain & behavior: An introduction to behavioral neuroscience 5. Sage Publications, Inc.

Open Educational Resources

Biswas-Deiner, R. (2020). Psychology as a biological science. Noba. (https://nobaproject.com/textbooks/psychology-as-a-biological-science)
http://neuroanatomy.ca/
Other Helpful OER Resources:
https://www.brainfacts.org/3d-brain
https://www.ted.com/topics/psychology

Class Size Information

Class Size

40

Class Size Category

A - Lecture/discussion 40

Diversity and Inclusion

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

Psychobiology explores the biological and physiological processes that underlie behavior and psychological functioning. While some of those are universal across the human species, this course explores related biological, psychological, social, and cultural factors that may contribute to differences based on race, gender, and sexuality. For example, the course explores how sexual differentiation occurs, and how variations in that process may result in intersex sexual development; racial and gender differences in the epidemiology of various psychological disorders; and how epigenetics may explain the ways in which different social and cultural factors may influence genetic changes that impact differences in health and life expectancy outcomes between different racial groups. The course will highlight diverse curriculum and
equity issues as they to historical and current bias in the scientific study of the brain and human behavior.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

Instruction will incorporate culturally relevant course materials using both formative and summative assignments with an emphasis on scaffolding to enable students to gain familiarity and confidence with discussing psychobiological concepts, analyzing literature and academic texts, and applying theories, concepts, and knowledge from Psychobiology and Neuroscience. This course prioritizes student growth and learning by facilitating student participation, interactive discussions, and critical assessment of related research and literature.

Additionally, the course utilizes a variety of instructional methods, assessments, and assignments in order to provide a variety of approaches that support diverse learning styles and allow students to demonstrate their learning through a variety of methods. This variation not only supports diverse leaning styles but also increases accessibility and engagement for many neurodiverse students. Furthermore, the applied activities are evidenced based practices to increase success outcomes for diverse students which have been historically marginalized in higher education.

Interactions

Explain how the course will incorporate student-to-student interaction.

This course facilitates student-to-student interaction through in-class interactive discussions and collaborative student activities and assignments outside of class. Students will analyze, discuss, and critique research related to psychobiological concepts. Both instructional methods and assignments will encourage group activities to allow for collaborative discussion, critique, analyses, and application of concepts, theories, and central themes related to the discipline. Group activities are expected to foster community and encourage student connection with the material and one another.

Explain how the course will incorporate instructor-to-student interaction.

The course will utilize an active learning environment to promote critical thinking and help students develop a more accurate understanding of Psychobiology. In addition to providing lectures that deliver content to students, instructors will also serve as a facilitator for the students to expand their understanding and analysis of the content and guide lab activities that offer students more hands on opportunities to learn psychobiological structures and processes. Additionally, the instructor will guide the students through both individual and group projects, in order to scaffold the learning of the content. Student and faculty-led groups will be facilitated to stimulate discussion, encourage understanding on key concepts, readings, research and scholarship in Psychobiology and better understand the various factors that contribute to our shared experiences as well as differences within the human species.

Explain how the course will incorporate student-to-content interaction.

Student-to-content interaction will be achieved through the assigned readings and assignments. Students will also interact with the content through the practical lab activities and applied learning activities. Class and homework activities will contribute to the students' learning as they apply the course learning concepts, critical thinking, and problem-solving skills in a safe, real-world context. Student essays and projects will also reflect their understanding of content, clarity of thought and opinions, and voice any remaining questions or concerns.

Explain how the course will incorporate student-to-self interaction (metacognitive).

Taking notes during readings, lectures, and lab activities will allow student-to-self interaction. This will them assess their understanding and identify areas for added clarification. Writing assignments such as journals and thought papers will also help students with their metacognition. Student-to-self interaction will be achieved through the use of in-class and online discussions (for both face to face and online (both synchronous and asynchronous) where students will be expected to write their thoughts first before sharing them in both small group and large group discussions. Additionally, reflection activities will be utilized to help students consider their understanding of the material, themselves, their learning process, and the diversity of experiences that contribute to the mind body relationship.

Key: 2679