

SS3711: BIOLOGICAL PSYCHOLOGY

Effective Term

Semester A 2022/23

Part I Course Overview

Course Title

Biological Psychology

Subject Code

SS - Social and Behavioural Sciences

Course Number

3711

Academic Unit

Social and Behavioural Sciences (SS)

College/School

College of Liberal Arts and Social Sciences (CH)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

SS1101 Basic Psychology or SS2023 Basic Psychology I

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to enable students to (1) understand the basic structure and functioning of the brain, and major research methods used in studying the relationship between brain and behavior, (2) analyze how the brain and physiology regulate

different behaviors, and (3) generate new ideas and hypotheses via critical evaluation of current theories and research findings in biological psychology.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Describe the most fundamental structures and functions of the nervous system;	20	x		
2	Understand research methods and techniques for studying the brain-behavior relationship;	20	x		
3	Analyze the biological mechanisms of different behaviors; and	30	x	x	
4	Evaluate critically research findings and generate testable hypotheses.	30	x	x	x

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

TLAs	Brief Description	CILO No.	Hours/week (if applicable)
Lectures	Major principles and research methods in biological psychology are described and explained, with an emphasis on (1) the relationship between brain structure and physiology on one hand, and behavior on the other, (2) evaluation of research findings in a critical manner.	1, 2, 3, 4	

2	Group Project	Students are required to generate and test hypotheses relevant to a designated topic in small groups. They are also required to collect and analyze the data, and write up the findings in a report. This assignment allows students to develop skills for (1) hypothesis formulation, (2) applying theories/concepts learned in class to write up a report of their project, and (3) evidence-based reasoning.	2, 3, 4	
3	Presentation	Students are required to lead and present findings of their group projects and share what they have learned with the class. They will be given the chance to demonstrate their ability to analyse findings reported in prior research and communicate their own findings effectively. This serves to stimulate critical thinking and enhance teamwork.	3, 4	

Additional Information for TLAs

TLA1: Lecture

- Major principles and research methods in biological psychology are described and explained, with an emphasis on (1) the relationship between brain structure and function, and (2) between physiology and behavior.

TLA2: Group Project

- Students are required to formulate and test hypotheses relevant to a designated topic in small groups. They will collect and analyze the data and write up the findings in a report. The data from all groups will be aggregated and returned to each group for subsequent analysis. Alternatively, if data collection is not feasible, students will be provided with a dataset from the instructor and write up the report with the dataset. This assignment allows students to develop skills in (1) hypothesis formulation, (2) applying theories/concepts learned in class to write up a report of their project, and (3) evidence-based reasoning.

TLA3: Group Project Presentation

- This allows students to integrate individual inputs from group members to present and critically evaluate scientific findings.

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Quizzes	1, 2, 3	50	
2	Presentation	3, 4	10	

3	Data collection	2, 3	10	
4	Project Report	1, 2, 3, 4	30	

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)**Assessment Task**

1. Quizzes

Criterion

Two quizzes (multiple-choice questions) designed to assess knowledge of the principles and research findings in biological psychology. First Quiz = 20%; second quiz = 20%.

Excellent (A+, A, A-)

Demonstrate an excellent understanding of the subject matter.

Good (B+, B, B-)

Demonstrate a good understanding of the subject matter, though missing some of the points.

Fair (C+, C, C-)

Demonstrate an adequate understanding of the core of the subject matter.

Marginal (D)

Demonstrate a limited understanding of the subject matter and can only recall limited content.

Failure (F)

Poor understanding of the subject matter.

Assessment Task

3. Presentation

Criterion

This assignment is designed to assess competence in hypothesis formulation and critical evaluation of research findings in biological psychology. Students are required to present major aspects of their projects in a small group to the class.

Excellent (A+, A, A-)

Demonstration of an excellent understanding of theories/concepts and methodologies; effective use of relevant information in presentation; excellent team work and highly organized

Good (B+, B, B-)

Demonstration of a good understanding of theories/concepts and methodologies; adequate use of relevant information in presentation; good team work and organized

Fair (C+, C, C-)

Demonstration of a certain degree of understanding of theories/concepts and methodologies; minimal use of relevant information in presentation; adequate team work and organization

Marginal (D)

Demonstration of a limited understanding of theories/concepts and methodologies; very limited use of relevant information in presentation; team work and organization need improvement

Failure (F)

Demonstration of a poor understanding of theories/concepts and methodologies; use of irrelevant information in presentation; poor team work and organization

Assessment Task

4. Project Report

Criterion

This is for evaluating the ability to (1) generate testable hypotheses, (2) collect and analyze data, (3) critical evaluate research findings, and (3) apply theories/concepts learned in class to write up a report. Students work in small groups of 4 to 5. This assignment serves to foster critical thinking on methodological and theoretical issues in biological psychology.

Excellent (A+, A, A-)

Able to apply relevant principles and perspectives to analyse empirical evidence in biopsychology; demonstration of excellent understanding of theories and principles relevant to the project; able to integrate theories or evidence from different lines of research.

Good (B+, B, B-)

Able to apply relevant principles and perspectives to analyse empirical evidence in biopsychology; demonstration of good understanding of theories and principles relevant to the project.

Fair (C+, C, C-)

Able to apply a limited number of principles and perspectives to analyse empirical evidence in biopsychology; demonstration of a limited understanding of theories and principles relevant to the project.

Marginal (D)

Apply limited and sometimes irrelevant principles and perspectives to analyse empirical evidence in biopsychology; limited understanding of theories and principles relevant to the project.

Failure (F)

Unable to apply any relevant principles and perspectives to analyse empirical evidence in biopsychology; poor understanding of theories and principles relevant to the project.

Assessment Task

5. Data collection

Criterion

This is designed to assess the ability to use a specific instrument to collect and analyze psychophysiological data for the term project

Excellent (A+, A, A-)

Demonstrate an excellent understanding of using the instrument; high quality of collected data.

Good (B+, B, B-)

Demonstrate a good understanding of using the instrument; good quality of collected data.

Fair (C+, C, C-)

Demonstrate an adequate understanding of using the instrument; adequate quality of collected data.

Marginal (D)

Demonstrate a limited understanding of using the instrument; poor quality of collected data.

Failure (F)

Poor understanding of using the instrument; collected data are not usable.

Part III Other Information

Keyword Syllabus

Nerve cell. Organization of nervous system. Brain and behaviour. Biological bases of fundamental psychological processes. Sleep and wakefulness. Physiology of the stress response. Mental Disorders. Emotions. Research methods. Drug addiction.

Reading List**Compulsory Readings**

	Title
1	Pinel, J. P. J. and Barnes, S. J. (2021). Biopsychology (10th ed., Global ed.). Singapore: Pearson. [eBook]
2	Carlson, N. R. (2021). Foundations of behavioral neuroscience (10th ed., Global ed.). Singapore: Pearson. [eBook]

Additional Readings

	Title
1	Kalat, J. W. (2013). Biological psychology (11th ed.). Singapore: Wadsworth.
2	Buss, D. M. (2012). Evolutionary psychology: The new science of the mind (4th ed.). Boston, MA: Ally & Bacon.