

BMS4303: NEUROSCIENCE

Effective Term

Semester A 2022/23

Part I Course Overview

Course Title

Neuroscience

Subject Code

BMS - Biomedical Sciences

Course Number

4303

Academic Unit

Biomedical Sciences (BMS)

College/School

Jockey Club College of Veterinary Medicine and Life Sciences (VM)

Course Duration

One Semester

Credit Units

3

Level

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

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

BMS2201 Molecular Biology of the Cell & BMS2004 Biochemistry

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course serves as a starting point for undergraduate students who want insight into how human nervous system works. It will provide students the fundamental knowledge in neuroscience, ranging from neural signaling to basic anatomy of the

nervous system. Students will discuss about the anatomy, functional, and diseases of the structural units/cell types of the neural system in tutorials, and will study certain brain structures and cell types in the lab unit.

Course Intended Learning Outcomes (CILOs)

CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Understand fundamental concepts and achieve knowledge of neuroscience	x		
2	Analyse research data and present in scientific ways		x	x
3	Develop the ability to raise scientific questions and discoveries	x	x	x
4	Master basic experimental skills in Neurosciences	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)
1	Lecture	Knowledge transfer will be based on lectures to make students understand various neuroscience topics and researches	1, 3
2	Tutorial	Student discussion and oral presentation will be held to improve students' scientific conversation skills and presentation skills	2, 3
3	Practical	Ability to perform some basic assays in Neurosciences	1, 2, 3, 4

Assessment Tasks / Activities (ATs)

ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Practical participation and lab report	1, 2, 3, 4	20

2	Group project and presentation	2, 3	20	
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Continuous Assessment (%)

40

Examination (%)

60

Examination Duration (Hours)

2-3

Additional Information for ATs

Minimum Passing Requirement: A minimum of 40% in continuous assessment as well as in examination.

Assessment Rubrics (AR)**Assessment Task**

1. Examination

Criterion

To test students' application of materials taught in class and evaluate their performance based on their understanding on the exam

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

2. Group project and presentation

Criterion

Ability to apply the knowledge from lectures as well as explore the knowledge that are not covered by the lectures; ability to present a selected topic; ability to collaborate with group mates.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

3. Practical/lab report

Criterion

Demonstrate subject-specific skills in carrying out experimental work, analyse data and draw conclusion

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

- Brain
- Spinal cord
- Nervous system
- Neurons
- Glial cells
- Neurodegenerative diseases
- Neural networking

Reading List

Compulsory Readings

	Title
1	No compulsory reading for this course. All contents are provided in the lecture notes which will be uploaded to Canvas before each lecture.

Additional Readings

	Title
1	Suggested reference book:Neuroscience (6th edition)by Dale Purves (Editor), George J. Augustine (Editor), David Fitzpatrick (Editor), William C. Hall (Editor), Anthony-Samuel LaMantia (Editor), Richard D. Mooney (Editor), Michael L. Platt (Editor), Leonard E. White (Editor)Publisher: Sinauer Associates is an imprint of Oxford University Press; 6 edition (October 12, 2017)Language: EnglishISBN-10: 1605353809