Course Syllabus
SIPS 531
Academic Year 2024
Department of Physiology
Faculty of Medicine Siriraj Hospital, Mahidol University

Course ID and name:	SIPS 531 NEUROSCIENCE I
Course coordinator:	Asst. Prof. Sompol Tapechum, M.D., Ph.D.
Instructors:	Asst. Prof. Sompol Tapechum, M.D., Ph.D. Assoc. Prof. Chailerd Pichitpornchai M.D., Ph.D. Assoc. Prof. Narawut Pakaprot M.D., Ph.D. Lect. Rujapope Sutiwisesak M.D., Ph.D. .....
Credits:	1 (1-0-2) (lecture – laboratory – self-study)
Curriculum:	Masters of Science Program in Medical Physiology
Course type:	☐ Core ☑ Required ☐ Electives
Semester offering:	1/2024
Prerequisite:	None
Date of Latest Revision:	.....

Course Description:

Cellular elements of nervous tissue, Electrical signaling in neurons, Fundamental properties of nerve action potential, Synaptic transmission, Neuronal network and Plasticity, Structures and Functions of Skeletal muscles, Properties of Skeletal muscle contraction, Physiology of Cardiac and Smooth muscles, Autonomic nervous system.

Course-level Learning Outcomes (CLOs)

Upon completion of this course, students are able to:

1. Explain the structures and functions of nervous system at cellular levels (ELO1,4)
2. Explain the structures and functions of muscular system (ELO1,4)
3. Describe the structures and functions of autonomic nervous system (ELO1,4)
4. Apply basic neuroscience knowledge to solve problems about the nervous system and muscular system (ELO1,2,4)

Constructive Alignment of CLOs and Program's ELOs

CLOs	ELO1	ELO2	ELO3	ELO4
1. Explain the structures and functions of nervous system at cellular levels	I			R

2. Explain the structures and functions of muscular system	I			R
3. Describe the structures and functions of autonomic nervous system	I			R
4. Apply basic neuroscience knowledge to solve problems about the nervous system and muscular system	I	I		R

Remarks: Show the level of the course management with the symbols I, R, P, and M.

Program's Expected Learning Outcomes

1. Demonstrate the current medical physiological knowledge for common clinical application.
2. Evaluate the scientific research and major research developments.
3. Perform medical physiology research with a technique in an ethical way to test an idea or hypothesis in an area of interest.
4. Communicate knowledge and ideas of medical physiological research clearly to peers and the scientific community at national level.

Table: Alignment of program ELOs and the contribution of individual courses.

Code	Name	Credits	ELO of MSc program			
			1	2	3	4
	Required courses					
SIPS531	Neuroscience 1	1(1-0-2)	●	◉		○

● Course outcomes, contents, teaching and learning approaches of this course are fully aligned with the ELO.

◉ Course outcomes, contents, teaching and learning approaches of this course are aligned with the ELO at the intermediate level.

○ Course outcomes, contents, teaching and learning approaches of this course are aligned with the ELO at the basic level.

Table: Relationship between Courses of the Program and Program Learning Outcomes

Code	Name	Credits	ELO of MSc program			
			1	2	3	4
	Required courses					
SIPS531	Neuroscience 1	1(1-0-2)	I	I		R

I = ELO is introduced & assessed

R = ELO is reinforced & assessed

P = ELO is practiced & assessed

M = Level of Mastery is assessed

Course Schedule and teaching/assessment plan

No.	Topic	Hours			CLOs	Teaching & learning strategy	Assessment (in-class)	Lecturers
		Lecture	Laboratory	Self Study				
1	Cellular elements of nervous tissue	1	-	2		Asynchronous lecture	Post-learning exercise	Dr.Rujapope
2	Electrical signaling in neurons	1	-	2		Asynchronous lecture	Post-learning exercise	Dr.Narawut
3	Fundamental properties of nerve action potential	2	-	4		Reading assignment and Discussion	Performance	Dr.Narawut
4	Synaptic transmission	1	-	2		Asynchronous lecture	Post-learning exercise	Dr.Sompol
5	Neuronal network and Plasticity	2	-	4		Reading assignment and Discussion	Performance	Dr.Sompol
6	Structures and Functions of Skeletal muscles	2	-	4		Asynchronous lecture	Post-learning exercise	Dr.Chailerd
7	Properties of Skeletal muscle contraction	2	-	4		Reading assignment and Discussion	Performance	Dr.Chailerd
8	Physiology of Cardiac and Smooth muscles	2	-	4		Asynchronous lecture	Post-learning exercise	Dr.Rujapope
9	Autonomic nervous system	2	-	4		Reading assignment and Discussion	Performance	Dr.Sompol
Total hours of the study		**15**	**-**	**30**				

Course Assignments

Assignment materials; reading, VDO

Assessment Criteria

GRADE DISTRIBUTION

80% Summative examination

20% Performance in discussion classes

	4	3	2	1	0
How well does the student participate in class by presenting data/asking questions/offering ideas? (Frequency of contributions)	Frequently and voluntarily (*Does not prevent others from answering)	Voluntarily	Responses only after being questioned or named	Rarely, reluctantly	Never
How good is the quality of student's contributions? (Quality of contributions)	Demonstrates comprehensive knowledge and critical thinking skills	Mostly relevant, reflecting understanding of knowledge	Somewhat relevant, reflecting some levels of understanding of knowledge	Not relevant, reflecting insufficient understanding of knowledge	Lacks understanding of knowledge or infrequent contributions
How well does the student behave during presentation? (Behavior in class)	Actively and respectfully pays attention to peers/instructor; full engagement throughout the class	Pays attention to peers/instructor; engages most of the time in class	Listens to peers/instructor	Sometimes does not listens to peers/instructor; sometimes displays inappropriate behavior	Fails to pay attention; displays inappropriate behavior in class

GRADE SCALE

A	80	to	100%
B+	65	to	<80%
B	50	to	<65%
F	<50%		
I-1			

I-2	Retake the exam and/or complete the assigned work within one month after the exam result is announced.
I-3	Complete the assigned work and retake the new evaluation within the next semester.
	Repeat the course as soon as it is offered.

Appeal Procedure

Students are able to inquire about their scores or grade directly to the course coordinator either by direct contact, telephone or email within 1 week after the scores or grade is announced. The appealing though the program is also available.