

Course Syllabus
SIPS 536
Academic Year 2025
Department of Physiology
Faculty of Medicine Siriraj Hospital, Mahidol University

Course ID and name:	SIPS 536: Neuroscience II
Course coordinator:	Assoc. Prof. Narawut Pakaprot, MD, PhD
Instructors:	Assoc. Prof. Chailerd Pichitpornchai, MD, PhD Assist. Prof. Sompol Tapechum, MD, PhD Assoc. Prof. Narawut Pakaprot, MD, PhD Dr. Rujapope Sutiwisesak, MD, PhD
Credits:	1 (1-0-2) (lecture – laboratory – self-study)
Curriculum:	Masters of Science Program in Medical Physiology
Course type:	☐ Core ☒ Required ☐ Electives
Semester offering:	01/2025
Prerequisite:	None
Date of Latest Revision:	27/06/2025

Course Description:

Neuroanatomy, properties of sensory receptors, somatosensation, special senses, vision tests, auditory tests, vestibular functions and body equilibrium tests, motor function, sleep-wake, circadian and homeostatic control, learning, memory, language and speech, electroencephalography and evoked potential

Course-level Learning Outcomes (CLOs)

Upon completion of this course, students are able to:

1. Apply the structures and functions of sensory system at circuitry levels (ELO 1,2,3)
2. Apply the structures and functions of brain areas that are involved in motor system, sleep-wake, circadian and homeostatic control, Learning, memory, language, and speech (ELO 1,2,3)

3. Participate in the discussion of neuroscience knowledge to solve problems about the nervous system (ELO 4)

Constructive Alignment of CLOs and Program's ELOs

CLOs	ELO1	ELO2	ELO3	ELO4
1. Apply the structures and functions of sensory system at circuitry levels	R	R	R	
2. Apply the structures and functions of brain areas that are involved in motor system, sleep-wake, circadian and homeostatic control, Learning, memory, language, and speech	R	R	R	
3. Participate in the discussion of neuroscience knowledge to solve problems about the nervous system				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.

Course Schedule and teaching/assessment plan

No.	Topic	Hours			CLOs	Teaching & learning strategy	Assessment (in-class)	Lecturers
		Lecture	Laboratory	Self Study				
1	Neuroanatomy	1	-	2	1,2	Asynchronous lecture	Post-learning exercise	Dr.Kanat
2	Properties of sensory receptors	1	-	2	1	Asynchronous lecture	Post-learning exercise	Dr.Narawut
3	Somatosensation	1	-	2	1	Asynchronous lecture	Post-learning exercise	Dr.Narawut
4	Special senses	2	-	4	1	Synchronous lecture	Post-learning exercise	Dr.Chailerd
7	vision tests	2	-	4	1,3	Synchronous discussion	Performance	Dr.Chailerd
8	Auditory tests, vestibular functions and body equilibrium tests	2	-	4	1,3	Synchronous discussion	Performance	Dr.Chailerd
9	Motor function (motor pathway and muscle receptors, motor cortex and	2	-	4	2	Asynchronous lecture	Post-learning exercise	Dr.Sompol

	descending pathways, brain stem descending pathways							
10	Motor function (cerebellum and basal ganglia)	1		2	2	Asynchronous lecture	Post-learning exercise	Dr.Rujapope
11	Sleep-wake, circadian and homeostatic control	1	-	2	2	Asynchronous lecture	Post-learning exercise	Dr.Sompol
12	Learning, memory, language, and speech,	1	-	2	2	Asynchronous lecture	Post-learning exercise	Dr.Narawut
13	Electroencephalography and evoked potential	2	-	4	1,2,3	Synchronous discussion	Performance	Dr.Narawut
14	Q & A	1	-	2	1,2,3	Online synchronous discussion	Q&A	Dr.Rujapope Dr.Narawut Dr.Chailerd Dr.Sompol
Total hours of the study		17	-	34				

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 or	Sometimes does not listen 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	Retake the exam and/or complete the assigned work within one month after the exam result is announced.		
I-2	Complete the assigned work and retake the new evaluation within the next semester.		
I-3	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 through the program is also available.