

**Course Syllabus**  
**MBNS610 Introductory neuroscience**  
**Academic Year 2023**

**Course ID and Name:** MBNS610 Introductory neuroscience

**Course coordinator:** Asst. Prof. Sujira Mukda, Ph.D.

Tel: 02-441-9003-7 ext. 1206/ 1437

E-mail: sujira.muk@mahidol.edu

**Instructors:**

1. Prof. Banthit Chetsawang, Ph.D.
2. Assoc. Prof. Nuanchan Chutabhakdikul, Ph.D.
3. Asst. Prof. Sujira Mukda, Ph.D.
4. Asst. Prof. Sukonthar Ngampramuan, Ph.D.
5. Dr. Jiraporn Panmanee, Ph.D.
6. Dr. Anuck Sawangjit, Ph.D.

**Supporting Staff:**

1. Ms. Somsong Phengsukdaeng
2. Ms. Sasithorn Prommet

**Credits:** 1 (1-0-2)

**Curriculum:** Master of Science Program in Neuroscience  
Doctor of Philosophy Program in Neuroscience

**Semester offering:** First semester

**Pre-requisites:** None

**Course learning outcomes (CLOs)**

Upon completion of this course, students can:

1. Explain the fundamental knowledge regarding the structure, development, and function of the nervous system. (PLO1) I, (PLO2) I
2. Apply the basic concept of scientific methods to be used in neuroscience research. (PLO2) I, (PLO3) I, (PLO4) I, (PLO5)

**Alignment of teaching and assessment methods to course learning outcome:**

Course learning outcome	Teaching method	Assessment method
1. Explain the fundamental knowledge regarding the structure, development, and	(1) Lecture (2) In-class discussion (3) Assignments/ Exercises	(1) Written examination (2) Assessment of assigned work/ exercises

Course learning outcome	Teaching method	Assessment method
function of the nervous system.		
2. Apply the basic concept of scientific methods to be used in neuroscience research.	(1) Lecture (2) In-class discussion (3) Assignments/ Exercises	(1) Written examination (2) Assessment of assigned work/ exercises

#### Course description:

Definitions and scope of neuroscience; the basic knowledge of neuron and the nervous tissue; generations of nerve impulse; neurotransmitters and hormones; an introduction to neuroanatomy; the external structure of the central nervous system; the early development of the nervous system; basic principles of the neuroscience research

#### Course schedule:

Date: Monday, Wednesday, Friday

Time: 09.30 – 11.30, 13.00 – 15.00

Rooms: A107 Ground Floor, Institute of Molecular Biosciences

	Date	Time	Topic	Lecturer
0	MON 07 Aug 2023	09.30-10.00	<b>L0:</b> Course orientation	Sujira <sup>(1)</sup>
1		10.00-11.00	<b>L1:</b> Basic organization of the nervous system, neuron and glia - CNS - PNS: ANS	Sukonthar <sup>(1)</sup>
2		11.00-12.00	<b>L2:</b> Introduction to neurophysiology (Membrane potential)	Banthit <sup>(1)</sup>
3		13.00-14.00	<b>L3:</b> Anatomy of the human central nervous system: Gross structure	Sukonthar <sup>(1)</sup>
4		14.00-15.00	<b>L4:</b> Anatomy of the human central nervous system: Deep brain structure	Sujira <sup>(1)</sup>
5	WED 09 Aug 2023	09.30-11.30	<b>L5:</b> Development of the nervous system and neuro-developmental disorders	Nuanchan <sup>(1)</sup>
6		13.00-15.00	<b>L6:</b> Cell biology for Neuroscience: DNA and gene expression, cell cycle, cell death	Jiraporn <sup>(1)</sup>
7	FRI 11 Aug 2023	09.30-11.30	<b>L7:</b> Basics of intracellular signaling mechanisms	Banthit <sup>(1)</sup>

	Date	Time	Topic	Lecturer
8		13.00-15.00	L8: Neurotransmitters and their pharmacological application	Sujira <sup>(1)</sup>
Exam I	WED 16 Aug 2023	09.00-16.00	Examination (L1-L5)	Sujira/ Somsong
9	FRI 18 Aug 2023	13.00-14.00	L9: Hormonal control of Behavior - Stress - Circadian - Etc.	Banthit <sup>(1)</sup>
10		14.00-16.00	L10: Introduction to cognitive sciences	Anuck <sup>(1)</sup>
Exam II	MON 21 Aug 2023	09.00-16.00	Examination (L6-L10)	Sujira/ Somsong

**Assessment criteria:**

Assessment criteria	Assessment method	Scoring rubrics
Written examination (90%)	(1) Multiple choices questions (2) Short essay questions (3) Take-home assignments	Scoring directly from true/false answer
Class attendance and participation in in-class discussion (10%)	(1) Numbers of classes signed in (2) Direct observation	Scoring directly from times of signing in

Student's achievement will be graded as satisfactory (S) or unsatisfactory (U) by using cut-point at the 70% of total scores:

Percentage	Grade	Description
70 - 100	S	Satisfactory
< 70	U	Unsatisfactory

**ATTENTION**

*(1) According to the Faculty of Graduate Studies regulation, enrolled students are required to attend classed more than 80% of total class time. Students will be disqualified from examination if they failed to comply with this regulation.*

Date revised: 5 April 2022