

Course Syllabus
MBNS610 Introductory neuroscience
Academic Year 2024

Course ID and Name: MBNS 610 Introductory neuroscience
Course coordinator: Assoc. Prof. Nuanchan Chutabhakdikul, Ph.D.
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Instructors:

1. Prof. Banthit Chetsawang, Ph.D.
2. Assoc. Prof. Nuanchan Chutabhakdikul, Ph.D.
3. Assoc. Prof. Sujira Mukda, Ph.D.
4. Assoc. Prof. Vorasith Siripornpanich, M.D. Ph.D.
5. Asst. Prof. Sukonthar Ngampramuan, Ph.D.
6. Asst. Prof. Jiraporn Panmanee, 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: All semesters

Pre-requisites: None

Course learning outcomes (CLOs)

Upon completion of this course, students can:

1. Demonstrate comprehensive knowledge of nervous system organization, identify the gross and deep brain structures, and explain the principles of neurophysiology
2. Understand the processes involved in brain development and their implications for neurodevelopmental disorders
3. Understand the principle of cell biology for neuroscience, intracellular signaling mechanisms, neurotransmitters and its receptors, along with their pharmacological applications
4. Explain the role of hormones in regulating behaviors and their impact on physiological and psychological processes
5. Understand the principle of cognitive neuroscience as well as their relevance in clinical aspects, and familiar with neuroimaging techniques

Alignment of teaching and assessment methods to course learning outcome:

Course learning outcomes	Teaching methods	Assessment methods
1. Demonstrate comprehensive knowledge of nervous system organization, identify the gross and deep brain structures, and explain the principles of neurophysiology	Lecture	Written examination / Quiz / or MCQs
2. Understand the processes involved in brain development and their implications for neurodevelopmental disorders	Lecture	Written examination / Quiz / or MCQs
3. Understand the principles of cell biology for neuroscience, intracellular signaling mechanisms, neurotransmitters and its receptors, along with their pharmacological applications	Lecture	Written examination / Quiz / or MCQs
4. Explain the role of hormones in regulating behaviors and their impact on physiological and psychological processes	Lecture	Written examination / Quiz / or MCQs
5. Understand the principle of cognitive neuroscience as well as their relevance in clinical aspects, and familiar with neuroimaging techniques	Lecture	Written examination / Quiz / or MCQs

Course description:

Organization of human nervous system; Introduction to neurophysiology; Gross structures and deep brain structures; Brain development and neurodevelopmental disorders; Cell biology for Neuroscience; Intracellular signaling mechanisms in the nervous system; Neurotransmitters and their pharmacological applications; Hormonal control of Behaviors; Foundations of cognitive neuroscience and clinical relevance

Course format: Instructor-paced via SPOC MUx online course

Lecture	Total Time	Weight 100%	Topics	Lecturer
1	1 hour	6.5%	L1: Organization of human nervous system	Sukonthar
2	1 hour	6.5%	L2: Introduction to neurophysiology	Banthit
3	1 hour	6.5%	L3: Gross structures of the nervous system	Sukonthar
4	1 hour	6.5%	L4: Deep brain structures	Sujira
5	2 hours	13.5%	L5: Brain development and neurodevelopmental disorders	Nuanchan
6	2 hours	13.5%	L6: Cell biology for Neuroscience	Jiraporn
7	2 hours	13.5%	L7: Intracellular signaling mechanisms in the nervous system	Banthit
8	2 hours	13.5%	L8: Neurotransmitters and their pharmacological applications	Sujira
9	1 hour	6.5%	L9: Hormonal control of Behaviors	Banthit
10	2 hours	13.5%	L10: Foundations of cognitive neuroscience and clinical relevance	Vorasith

Assessment criteria:

Assessment criteria	Assessment method	Scoring
Written examination / Quiz / or MCQs (100%)	Short examination after the class (10 points per hour of lecture)	Total number of correct answers

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

Date revised: 6 May 2024