Course Syllabus

MBNS 755 Advanced Neuroscience

Academic Year 2023

Course ID and Name: MBNS 755 Advanced Neuroscience

Course Coordinator: Asst. Prof. Sukonthar Ngampramuan, Ph.D.
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Instructors:

1. Prof. Banthit Chetsawang, Ph.D.
2. Assoc. Prof. Nuanchan Chutabhakdikul, Ph.D.
3. Assoc. Prof.Doctor. Vorasith Siripornpanich, M.D., Ph.D.
4. Assoc. Prof. Sujira Mukda, Ph.D.
5. Assoc. Prof. Paul Klosen, PhD, HDR
6. Asst. Prof. Sukonthar Ngampramuan, Ph.D.
7. Dr. Jiraporn Panmanee, Ph.D.
8. Dr. Anuck Sawangjit, Ph.D
9. Dr. Siraprapa Boobphahom, Ph.D.

Supporting Staff:

1. Mrs. Somsong Phengsukdaeng
2. Mrs. Sasithorn Prommet

Credits: 2 (2-0-4)

Curriculum: Doctor of Philosophy Program in Neuroscience
Ph.D. plan 2.1, 2.2 (required course)

Semester offering: Second semester

Pre-requisites: None

Course learning outcomes (CLOs):

Upon completion of this course, students are able to:

1. Possess broad, profound advanced knowledge and cutting-field for neuroscience research (R) (PLO 1, PLO 2)
2. Capable of tracking advancements and shifting trends in neuroscience knowledge (R) (PLO 2, PLO 3)
3. Present and discuss the novel research ideas (R) (PLO1,PLO4,PLO5)

Alignment of teaching and assessment methods to course learning outcome:

Course learning outcome	Teaching method	Assessment method
CLO1: Possess broad, profound advanced knowledge and cutting-edge tools for neuroscience research (PLO 1, PLO 2)	(1) Lecture (2) Class discussion (3) student active learning	(1) assignment (2) In-class discussion
CLO2: Capable of tracking advancements and shifting trends in neuroscience knowledge (PLO 2, PLO 3)	(1) Lecture (2) Class discussion (3) student active learning	(1) assignment (2) In-class discussion
CLO3: . Present and discuss the novel research ideas (PLO1,PLO4,PLO5)	Presentation and discussions	(1) Student presentation (2) In-class discussion (3) Oral presentation score sheet

Course Description:

Advanced knowledge and cutting-edge tools for neuroscience research; tracking advancements and shifting trends knowledge in neuroscience; present and discuss the novel research ideas.

Course schedule: MBNS 755 Advanced Neuroscience

Academic Year 2023

Date: Monday, Wednesday, Friday

Time: 09.30 – 11.30, 13.00-15.00

Venue: Room A 409 and online zoom meeting

No	Date/	Time	Topic/Details	Lecturer
1	Wed 23 Aug	09.30-11.30	**L1:** Introduction to Advance Neuroscience The Next 50 Years of Neuroscience	Sukonthar
2		13.00-15.00	**L2:** Applications of structural biology in neuroscience research	Jiraporn
3	Fri 25 Aug	09.30-11.30	**L3:** Concepts and Principles of Research the “practical” approach	Paul
4		13.00-15.00	**L4:** Circadian rhythms: from cellular clocks to neuroendocrine control of physiologythms	Paul
5	Mon 28 Aug	09.30-11.30	**L5:** Future Horizons for Neurodevelopmental Disorders: Placental Mechanisms	Nuanchan
6		13.00-15.00	**L6:** Neuroimmunology	Banthit
7	Wed 30 Aug	09.30-11.30	**L7:** What happens in the brain when a stroke occurs?	Sujira
8		13.00-15.00	**L8:** Electrochemical sensors for neurodegenerative disorders	Siraprapa
9	Fri 1 Sep	09.30-11.30	**L9:** Proteomics in neuroscience	Jiraporn
10		13.00-15.00	**L10:** Cannabis and the developing brain	Nuanchan
11	Tue 5 Sep	09.30-11.30	**L11:** From systems to behaviors	Sukonthar
12		13.00-15.00	**L12:** Role of PANoptosis in neuronal cell death	Sujira
13	Wed 6 Sep	09.30-11.30	**L13:** Home sleep test, Actigraphy, and other novel sleep studies	Vorasith
14		14.00-16.00	**L14:** Can memories be manipulated?	Anuck

No	Date/	Time	Topic/Details	Lecturer
15	Fri 8 Sep	09.30-11.30	**L15:** Optical sensing and biosensing for neurotransmitters	Siraprapa
16	Mon 18 Sep	13.00-15.00	Student presentation	Staff

Assessment Criteria:

Assignment 40%

Presentation 30%

Class discussion 20%

Class attendance 10%

Student's achievement will be graded using symbols: A, B+, B, C+, C, D+, D, and F based on the criteria as follows:

Percentage	Grade	Description
85-100	A	Excellent
80-84	B+	Very good
70-79	B	Good
60-69	C+	Fairly good
50-59	C	Fair
45-49	D+	Poor
40-44	D	Very poor
< 40	F	Fall

Date revised: 12 April 2023