

**Course Syllabus**  
**MBNS 651 Neuroendocrinology**  
**Academic year 2025**

**Course ID and Name:** MBNS 651 Neuroendocrinology

**Course coordinator:** Asst. Prof. Sukonthar Ngampramuan

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**Instructors:**

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10. Lect. Dr. Ekkaphot Khongkla, Ph.D. ([ekkaphot.kho@mahidol.ac.th](mailto:ekkaphot.kho@mahidol.ac.th))

**Supporting Staff:**

Somsong Phengsukdaeng

**Credits:** 2 (2-0-4)

**Curriculum** Master of Science Program in Neuroscience (elective course)  
Doctor of Philosophy Program in Neuroscience (elective course for B.Sc.  
Graduates)

**Semester offering:** First semester

**Pre-requisites:** None

**Expected learning outcomes:**

1. Explain the theoretical and experimental studies of the relationships between the nervous system and the endocrine glands (PLO2) I
2. Describe the neural controls of endocrine functions and their behavioral correlates to organs (PLO2) I

3. Discuss and present the research on neuroendocrinology aspects (PLO1, PLo5) I, P

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

| Course learning outcome                                                                                                      | Teaching method                                         | Assessment methods                                                       |
|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------|
| 1.Explain the theoretical and experimental studies of the relationships between the nervous system and the endocrine glands. | (1) Lecture<br>(2) Class discussion                     | (1) Written examination<br>(2) Reports<br>(3) In-class discussion        |
| 2. Describe the neural controls of endocrine functions and their behavioral correlates to organs.                            | (1) Lecture<br>(2) Class discussion                     | (1) Written examination<br>(2) Reports<br>(3) In-class discussion        |
| 3. Discuss and present the research on neuroendocrinology aspects                                                            | Paper assignment<br>active learning<br>Class discussion | (1) Student presentation<br>With rubric score<br>(2) In-class discussion |

**Course Description:**

The theoretical and experimental studies of the relationships between the nervous system and the endocrine glands; neural controls of endocrine functions; endocrine and hormonal influences on the development and function of the nervous system and their behavioral correlates to the organs

**Course schedule:** 2025

**Time:** 09.30-11.30/13.30-15.30

**Room:** On-site at room A 409, Mahidol, Salaya, or

\*online Zoom meeting

### MBNS 651 Neuroendocrinology 2025

| No  | Date        | Time               | Topic/Details                                                                                                    | Lecturer       |
|-----|-------------|--------------------|------------------------------------------------------------------------------------------------------------------|----------------|
| 1.  | 26 Nov 2025 | 09.30-11.30        | L1: Introduction to Neuroendocrinology                                                                           | Sukonthar      |
| 2.  |             | 13.30-15.30        | L2: Neural regulation and functions of prolactin                                                                 | Ekkaphot       |
| 3.  | 28 Nov 2025 | 09.30-11.30        | L3: Neuroendocrine regulation of reproductive system (reproductive cycle, pregnancy, parturition, and menopause) | Ekkaphot       |
|     |             | 13.30-15.30        | L4: Neuroendocrine regulation of thyroid hormone                                                                 | Vorasith       |
| 4.  | 2 Dec 2025  | 09.30-11.30        | L5: Neuroendocrine regulation of biological clock and clock-controlled gene                                      | Sujira         |
| 5.  |             | 13.30-15.30        | L6: Regulation of the gonadotropic axis: beyond the GnRH neuron                                                  | Klosen*        |
| 6.  | 4 Dec 2025  | 09.30-11.30        | L7: Neural regulation and functions of posterior pituitary hormones                                              | Ekkaphot       |
| 7.  |             | 13.30-15.30        | L8: Neuroendocrine regulation of growth hormone                                                                  | Vorasith       |
|     | 8 Dec 2025  | <b>09.00-16.00</b> | <b>Midterm Examination</b>                                                                                       | <b>Somsong</b> |
| 8.  | 9 Dec 2025  | 09.30-11.30        | L9: Neuroendocrine regulation of stress response                                                                 | Nuanchan       |
|     |             | 13.30-15.30        | L10: Neuroendocrine regulation of immunity                                                                       | Banthit        |
| 9.  | 11 Dec 2025 | 09.30-11.30        | L11: Neuroendocrine regulation of learning and memory                                                            | Jiraporn       |
| 10. |             | 13.00-15.30        | L12: Neuronal control of melatonin synthesis and functions                                                       | Piyarat*       |

| No  | Date        | Time        | Topic/Details                                                        | Lecturer  |
|-----|-------------|-------------|----------------------------------------------------------------------|-----------|
| 11. | 12 Dec 2025 | 09.30-11.30 | L13: Neuroendocrine regulation of food intake and energy homeostasis | Sukonthar |
| 12. |             | 13.00-15.30 | L14: Methods in Neuroendocrinology                                   | Siraprapa |
| 13. | 15 Dec 2025 | 09.00-16.00 | Final examination                                                    | Somsong   |

**Room:** Onsite at room A 409 Mahidol, Salaya, or

Room: Onsite at room A 409 Mahidol, Salaya, or

\* online Zoom meeting

#### **Assessment Criteria:**

Student's achievements 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: October 2025