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

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

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**Instructors:**

1. Prof. Emeritus Piyarat Govitrapong, Ph.D. (piyarat.gov@mahidol.ac.th)

2. Prof. Banthit Chetsawang, Ph.D. (banthit.che@mahidol.ac.th)

3. Assoc. Prof. Nuanchan Chutabhakdikul, Ph.D. (nuanchan.chu@mahidol.ac.th)

4. Assoc. Prof. Paul Klosen, PhD, HDR (klosen@inci-cnrs.unistra.fr)

5. Assoc. Prof. Vorasith Siripornpanich, M.D., Ph.D. (vorasith.sir@gmail.com)

6. Asst. Prof. Sujira Mukda, Ph.D. (sujira.muk@mahidol.ac.th)

7. Asst. Prof. Sukonthar Ngampramuan, Ph.D. (sukonthar.nga@mahidol.ac.th)

8. Asst. Prof. Kittikun Viwatpinyo, Ph.D. (kittikun.viw@gmail.com)

9. Asst. Prof. Nattapon Panupinthu, M.D., Ph.D.(nattapon.pan@mahidol.ac.th)

10. Dr. Jiraporn Panmanee, Ph.D. (jiraporn.pam@mahidol.ac.th)


**Supporting Staff:**

Somsong Phengsukdaeng

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

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

**Semester offering:** First semester

**Pre-requisites:** No

**Expected learning outcomes:**

1. Explain the theoretical and experimental studies of the relationships between the nervous system and the endocrine glands (PLO2) P

2. Describe the neural controls of endocrine functions and their behavioral correlates to organs (PLO2) P

3. Discuss and present the research on neuroendocrinology aspects (PLO1 (I),PLO3 (P),PLO4 (P) PLO5) (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 active learning Class discussion | (1) Student presentation With rubric score<br>(2) In-class discussion |

**Course description:**

MBNS 651　　Neuroendocrinology　　　　　　　　　　　　　2(2-0-4)

**ชมปว ๖๕๑　　ประสาทชีววิทยาของระบบต่อมไร้ท่อ**

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

ทฤษฎีและการศึกษาทดลองถึงความสัมพันธ์ระหว่างระบบประสาทกับต่อมไร้ท่อ   การควบคุมการทำงานของ
ระบบประสาทต่อหน้าที่ของระบบต่อมไร้ท่อ   อิทธิพลของฮอร์โมนและต่อมไร้ท่อต่อการพัฒนาและการทำงาน
ของระบบประสาทและพฤติกรรมที่เกี่ยวกับกับอวัยวะภายในนั้นๆ

**Course schedule**:  August 2022

**Time:** 09.00-11.00/13.00-15.00/14.30-16.30

**Room** A409 and online class zoom meeting

| Date/Time | Topic/Details | Number of Hours | Class Activity/Teaching Media | Lecturer |
|---|---|---|---|---|
| Mon Aug 8 09.00-09.30 | Neuroendocrinology course orientation | 0.5 | Lecture, class discussion | Sukonthar Jiraporn |
| Mon Aug 8 09.30-11.30 | 1. Introduction to Neuroendocrinology | 2 | Lecture, class discussion | Sukonthar |
| Mon Aug 8 13.00-15.00 | 2. Neuroendocrine regulation of reproductive system (reproductive cycle, pregnancy, parturition, and menopause) Neural regulation and functions of | 2 | Lecture, class discussion | Kittikun |
| Tue Aug 9 13.00-15.00 | 3. prolactin | 2 | Lecture, class discussion | Nattapon |
| Wed Aug 10 13.00-15.00 | 4. Regulation of the gonadotropic axis: beyond the GnRH neuron | 2 | Lecture, class discussion | Klosen |
| Mon Aug 15 09.00-11.00 | 5. Neural regulation and functions of posterior pituitary hormones | 2 | Lecture, class discussion | Kittikun |
| Mon Aug 15 13.00-15.00 | 6. Neuroendocrine regulation of water balance fluid homeostasis, and food intake | 2 | Lecture, class discussion | Sukonthar |
| Wed Aug 17 9.00-11.00 | 7. Neuroendocrine regulation of stress response | | Lecture, class discussion | Nuanchan |
| Wed Aug 17 13.00-15.00 | 8. Neuroendocrine correlates of aging | | Lecture, class discussion | Banthit |
| Fri Aug 19 09.00-11.00 | 9.  Neuroendocrine regulation of learning and memory | 2 | Lecture, class discussion | Jiraporn |

| Date/Time | Topic/Details | Number of Hours | Class Activity/Teaching Media | Lecturer |
|---|---|---|---|---|
| Fri Aug 19 14.30-16.30 | 10. Neuroendocrine regulation of growth hormone | 2 | Lecture, class discussion | Vorasith |
| Mon Aug 22 09.00-16.00 | Mid-term Examination (Topic1-8) | | | Somsong |
| Wed Aug 24 09.00-11.00 | 11. Neuronal control of melatonin synthesis and functions | 2 | Lecture, class discussion | Piyarat |
| Wed Aug 24 13.00-15.00 | 12. Neuroendocrine regulation of biological clock and clock-controlled gene | 2 | Lecture, class discussion | Sujira |
| Fri Aug 26 09.00-11.00 | 13. Neuroendocrine regulation of immunity | 2 | Lecture, class discussion | Banthit |
| Fri Aug 26 14.30-16.30 | 14. Neuroendocrine regulation of thyroid hormone | | Lecture, class discussion | Vorasith |
| Mon Aug 29 09.00-16.00 | Final Examination (Topic 9-14) | | | Somsong |
| Fri Sep 2 09.00-11.00 | 15. Neuroendocrinology journal presentation | 2 | class presentation and discussion, Assessment of assigned work active leaning | Jiraporn and staff |

**Course schedule**: August 2022

**Time:** 09.00-11.00 and 13.00-15.00/14.30-16.30

**Room** MB Building A 409  **Online** Zoom meeting provides by the NS program

**Assessment Criteria:**

Written examination 70 %

Student performance /Student presentation 20 %

Class Attendance and class participation 10 %

| Presentation performance evaluation rubric (10% of total score) | | | | | |
|---|---|---|---|---|---|
| Criteria | Excellent (score = 5) | Very good (score = 4) | Good (score = 3) | Fair (score = 2) | Poor (score = 1) |
| **Information quality and presentation organization** | The main topics are given explicitly, with outstanding depth | Good amounts of information are used to present the | Although the main themes are reasonably | The main points are vague and underdeveloped. Some of the | There is no detail, and the main topics are ignored. |

| **(including answering the questions) (5%)** | and structure. The information is directly related to the presentation's topic. | main ideas. The information is well arranged and related to the subject at hand. | clear, extra information could be helpful. Information is arranged and related to the stated subject. | information is off-topic and the organization is loose. | The information is disorganized and off-topic. |
|---|---|---|---|---|---|
| **Verbal communication and English proficiency (2.5%)** | The speaker has a strong, clear, and confident voice. The spoken word is very fluid and grammatically correct. | The speaker has a steady and confident voice. Most of the time, spoken language is fluid and grammatically correct. | Though it may be improved, the speaker's voice is moderately confident. The spoken language is fair and has a few grammatical mistakes. | Speaker's voice is unsteady and lacks confident. Use of spoken language needs to be improved, and many errors can be recognized. | Speaker fails to provide a proper oral presentation. Inability to provide presentation in English orally. |
| **Visual tools (2.5%)** | Visual aids are very creative, easy to read and substantially enhance presentation. | Typically, visual aids are simple and easy to understand. | Visual aids are good, although there are several areas that may be made better. | Limited visual aids are used or difficult to help audiences follow the topic. | No visual aids are used, and presentation is not interested by audiences. |

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: 5 July 2022