

Doctor of Philosophy Program in Veterinary Science (International Program)

1. Course Code and Title

2. Number of Credits 2 (0-6-2)
(Theory 0 hrs. Practice 6 hrs. Self-Study 2 hrs./week)

3.1	Program	Doctor of Philosophy Program in Veterinary Science (International Program)		
3.2	Course Type	Specific Course ☐	Compulsory Course ☐	Elective Course ☒

4.1 Course Responsible Instructor
Asst.Prof Dr. Duangthip Chatchaisak (DC)
Department of Clinical Science and Public Health e-mail: duangthip.cha@mahidol.ac.th

4.2 Instructors

1.Asst.Prof Dr. Duangthip Chatchaisak (DC)
Department of Clinical Science and Public Health e-mail: duangthip.cha@mahidol.ac.th

2.Inst. Dr. Sataporn Phochantachinda (STP)
Department of Clinical Science and Public Health e-mail: sataporn.pho@mahidol.ac.th

3.Veterinary neurologists at neurological clinic, Prasuarthon Animal Hospital

5.1	Semester	1/ Class level
5.2	Number of Students Allowed	Approximately 6 Students

6. Prerequisites

None

7. Co-requisites

None

8. Date of Preparation/Latest Revision of the Course Specifications

16th July 2025

Section 2 Course Goals and Course Description

1. Course Goals

The program is specifically designed for students interested in pursuing a professional career in Veterinary Neurologist. Emphasis is placed on the development and enhancement of essential skills to prepare students for their future roles as neurologist. This includes the planning of neurological case, from assess the neurological signs to diagnoses and treatments plans, and research project. Another important element of the program is the development skills of effectively communication, interaction with pet owners and collaborating veterinarians.

2. Course Description

(In Thai) ทักษะปฏิบัติในการตรวจระบบประสาท การระบุตำแหน่งรอยโรค การวินิจฉัยและแนวทางการจัดการภาวะชัก ภาวะโคม่า ภาวะกึ่งโคม่า และการเปลี่ยนแปลงพฤติกรรม ความผิดปกติของระบบประสาทจักษุ ความผิดปกติของระบบขับถ่ายปัสสาวะ อัมพฤกษ์ อัมพาต ภาวะกล้ามเนื้อเสียสหการ ความผิดปกติของการ เคลื่อนไหวนอกอำนาจใจ อาการผิดปกติมากกว่าหนึ่งตำแหน่ง จรรยาบรรณและมาตรฐานแห่งวิชาชีพ

(In English) Clinical skills in neurological examination, lesion localization; diagnosis and management of seizure, coma, stupor and behavioral change; neuro-ophthalmologic disorders, micturition disorders, paresis, paralysis, ataxia, involuntary movement disorders, multifocal signs, ethical and professional standard

Section 3

Course Objectives, Course-level Learning Outcomes and Course Implementation

1. Course Objectives

1. Accurately assess the neurological condition in accordance with professional standards.
 2. Correctly plan the diagnosis, treatment, and follow-up care for neurological cases in accordance with professional standards.
 3. Accurately perform specialized procedures related to the diagnosis and treatment of neurological cases in accordance with professional standards.
 4. Effectively communicate the diagnostic, treatment, and follow-up care processes for neurological cases to both pet owners and collaborating veterinarians in accordance with professional standard
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2. Course-level Learning Outcomes: CLOs

On completion of the course, the students will be able to

- 1) CLO 1 Justify the neurological condition with professional standards
- 2) CLO 2 Integrate knowledge to solve neurological diseases with professional standards
- 3) CLO 3 Justify the specialized procedures in the diagnosis and treatment of neurological cases with professional standards
- 4) CLO 4 Development effectively communication, interaction with pet owners and collaborating veterinarians

2. How to organize learning experiences to develop the knowledge or skills stated in number 2 and how to measure the learning outcomes

CLOs	Teaching and learning experience management	Learning outcomes measurements		
		Attention, answering	Log book	Oral examination
CLO1 Justify the neurological condition with professional standards	Practical training with neurological cases	X	X	
CLO2 Integrate knowledge to solve neurological diseases with professional standards	Practical training with neurological cases	X	X	

CLOs	Teaching and learning experience management	Learning outcomes measurements		
		Attention, answering	Log book	Oral examination
CLO3 Justify the specialized procedures in the diagnosis and treatment of neurological cases with professional standards	Practical training with neurological cases	X	X	
CLO 4 Development effectively communication, interaction with pet owners and collaborating veterinarians	Practical training with neurological cases	X		X

Section 4 Lesson Plan and Evaluation

1. Lesson Plan

Teaching Period	Topics/Details	Number of hours		Methods: Teaching Media	Lecturer
		Practice	Self study		
1	Orientation Neurological Clinic	6	2	Case study	Instructors
2	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
3	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
4	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
5	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
6	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
7	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
8	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors

Teaching Period	Topics/Details	Number of hours		Methods: Teaching Media	Lecturer
		Practice	Self study		
9	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
10	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
11	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
12	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
13	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
14	Neurological practice	6	2	Work practice in the work place Case presentation	Instructors
15	Neurological practice	6	2	Work practice in the work place Case presentation and log book	Instructors
	Total hours of the entire semester	90	30		

2. Plan for Assessment of Expected Course-Level Learning Outcomes (CLOs)

2.1 Measurement and Evaluation of learning achievement

A. Formative Assessment

The assessment is performed during the course to measure the progress and development of students' learning by observing the behavior change and improvement of students' behavior and performance. The assessment results will be notified to the students (feedback) so that the students are constantly able to improve themselves. The assessment results are not included with the test scores at the end of the course.

B. Summative Assessment

(1) Tool and weight for measurement and evaluation

Course Learning Outcome	Evaluation Method*				Weight (%)
	Instructors	Attention Answer	Case presentation	Log book	
CLO1 Justify the neurological condition with professional standards	5	5	-	-	10
CLO2 Integrate knowledge to solve neurological diseases with professional standards	10	5	5	5	25

CLO3 Justify the specialized procedures in the diagnosis and treatment of neurological cases with professional standards	10	5	5	5	25
CLO 4 Development effectively communication, interaction with pet owners and collaborating veterinarians	10	15	15		40
Total	35	30	25	10	100

(2) Grading Rules

The grading symbols are: A, B+, B, C+, C, D+, D, and F. Students must receive a 'D' grade or above to pass the criteria.

(3) Measurement and Evaluation

The measurement and evaluation use the criteria-based, according to the conditions and methods for academic results evaluation of the Faculty of Veterinary Science, Mahidol University.

2.2 Re-examination (if the course allows any.)

In case that students received an 'F' grade, the course coordinator and the program's Teaching and the program administration committee should, altogether, agreed to allow the students to take the re-examination or extra-course work to pass the course with the following conditions. The minimum score is not less than 45.00. to take to re-examination or extra-course work. Once students took the re-examination (extra-course work) and the course coordinator had considered the students' re-examination/course work to pass the criteria, then the students will receive the 'D' grade. While waiting for the re-examination or extra-course work result, the students' score should be indicated as 'I' grade.

3. Students' Appeal

Should the students have any suspicion or appeals to the teaching and learning activities and the grade assessment, students could make the appeal by filling in the form at MUVS' Academic Affairs. The appeal will be proposed to the course coordinator to consider the request. If the appeal could not be addressed at this point, it will be further process by the program administration committee. In case that the committee suggested further investigation should be done, the appeal will be purposed to the faculty's appealing committee to address the issue.

Section 5 Teaching Resources

1. Required Texts

1. Cote E, Ettinger SJ and Feldman EC, editors. Ettinger's Textbook of veterinary internal medicine. 2 Vols. 9th ed. Philadelphia: Elsevier; 2024.
2. Budde JA and McCluskey DM, editors. Plumb's veterinary drug handbook. 10th ed. Iowa: Wiley-Blackwell; 2023.
3. Tilley LP, Smith FWK, editors. The 5-minute veterinary consult canine and feline. 3rd ed. Philadelphia: Lippincott Williams & Wilkins; 2004.
4. Lorenz MD, Coates JR and Kent M, editors. Handbook of veterinary neurology. 5th ed. Saunders: Elsevier; 2010
5. Mai W, editor. Diagnostic MRI in dogs and cats. Taylor & Francis group; 2018
6. Silverstein D and Hopper K., editors, Small Animal Critical Care Medicine. 3rd ed. St.Louis: Elsevier Saunders; 2023.
7. Booth DM, editors. Small animal clinical pharmacology & therapeutics. 2nd ed. St.Louis: Elsevier Saunders; 2012.
8. Ford RB, Mazzaferro EM. Kirk and Bistner's handbook of veterinary procedures and emergency treatment. 9th ed. St.Louis: Saunders Elsevier; 2012.
9. DiBartola SP, editors. Fluid, electrolyte, and acid-base disorders in small animal practice. 4th ed. St.Louis: Elsevier Saunders; 2012.
10. King AG and Boag A, editors. BSAVA Manual of Canine and Feline Emergency and Critical Care. 3th ed. Gloucester: BSAVA; 2018.

2. Suggested Materials

- 1) Academic Search Ultimate (EBSCO) 2) Biomed Central (BMC)
- 3) Google scholar
- 4) SCOPUS
- 5) Nature Journal (Springer Nature) 6) Pubmed
- 7) SAGE online
- 8) Scienedirect

3. Other Resources (if any)

Mahidol University Library and Knowledge Center (<https://www.li.mahidol.ac.th>)

Section 6 Evaluation and Improvement of Course Implementation

1. Analysis and Evaluation of Course Implementation

A. Data for Analysis

Course evaluation forms based on the following information:

- (1) the students' academic performance
- (2) the students' evaluation results,
- (3) the instructors' assessment results.

B. Course Effectiveness Evaluation

At the end of each course, it is required for the students to assess the teaching of each instructor based on the following criteria: punctuality, good role model, application of morals and ethics for the instruction, ability to convey knowledge and encourage students to learn, giving opportunities for students to ask questions and to comment during the study.

The overall outcomes of each course will also be assessed by the students for the following issues: the instructor's knowledge and competency, the course's effectiveness, student's satisfaction with the study, and other comments from students. The evaluation is conducted through online platform.

2. Revision Process and Improvement Plan for Course Effectiveness

Prior to each academic year, there are meetings/seminars for the instructors of each course to plan to improve the course's teaching and learning management based on the following information.

2.1 the students' evaluation for the instruction and overall outcomes of the course in accordance to criteria mentioned above.

2.2 The instructors must perform self-assessment for the following criteria:

- (1) Appropriate time spent to prepare for the teaching,
- (2) The instructor's satisfaction with the teaching results,
- (3) Solutions or recommendations for the program's teaching improvement or self-improvement

for the next class/academic year.

After the course evaluation and verification, the course effectiveness will be improved through the following:

1. (1) The course is revised every 3 years according to the evaluation and verification.
2. (2) Rotation or changing of instructors so students get different research points of view.

3. The self-assessment report of the course

At the end of each academic year, the course coordinators, instructors, the Program Committee, and the Teaching and Learning Development Committee will consider the assessment results and the Learning Outcome for the Course to plan for the improvement of the next academic year.

Appendix

1. Relations between the course and the program

Table 1 Relations between the course and the PLOs

Course Title	Program-Level Learning Outcomes (PLOs)				
	PLO1	PLO2	PLO3	PLO4	PLO5
VSCL 879 Clinical Skills in Small Animal Neurology 2 (0-6-2)	M	M	R	R	R

Table 2 Relation between CLOs and PLOs

(Course Code) VSCL 879	Program-Level Learning Outcomes (PLOs)				
	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1 Justify the neurological condition with professional standards	√	√		√	
CLO2 Integrate knowledge to solve neurological diseases with professional standards	√	√		√	√
CLO3 Justify the specialized procedures in the diagnosis and treatment of neurological cases with professional standards	√	√		√	√
CLO 4 Development effectively communication, interaction with pet owners and collaborating veterinarians		√			√

3. Relations between the course and Sustainable Development Goals (SDGs)

☐	SDG1	No poverty
☐	SDG2	Zero Hunger
✓	SDG3	Good Health and Well – being
✓	SDG4	Quality Education
☐	SDG5	Gender Equality
☐	SDG6	Clean Water and Sanitation
☐	SDG7	Affordable and Clean Energy
☐	SDG8	Decent Work and Economic Growth
☐	SDG9	Industry, Innovation and Infrastructure
☐	SDG10	Reduced Inequalities
☐	SDG11	Sustainable Cities and Communities
☐	SDG12	Responsible Consumption and Production
☐	SDG13	Climate Action
☐	SDG14	Life Below Water
☐	SDG15	Life on Land
☐	SDG16	Peace, Justice and Strong Institutions
☐	SDG17	Partnerships for the goals

Course Schedule
VSCL 879 Clinical Skills in Small Animal Neurology
Semester 1.Academic Year 2026
Neurological clinic at Prasuarthon Animal Hospital
(2nd floor and MRI room)

No.	Date	Time	Topics/Details	Instructor's nama/ advi- sor
1	3- 4 Aug 2026	Orientation Neurological practice	Neurologicl clinic	DC/ STP
2	10 -11 Aug 2026	Neurological practice	Practice in neurologicl clinic	DC/ STP
3	17 - 18 Aug 2026	Neurological practice	Practice in neurologicl clinic	DC/ STP
4	24 - 25 Aug 2026	Neurological practice	Practice in neurologicl clinic	DC/ STP
5	31 Aug 2026	Neurological practice	Practice in neurologicl clinic	DC/ STP
6	7- 8 Sep 2026	Neurological practice	Practice in neurologicl clinic Oral presentation	DC/ STP
7	14 -15 Sep 2026	Neurological practice	Practice in neurologicl clinic	DC/ STP
8	21- 22 Sep 2026	Neurological practice	Practice in neurologicl clinic	DC/ STP
9	28 - 29 Sep 2026	Neurological practice	Practice in neurologicl clinic	DC/ STP
10	5 - 6 Oct 2026	Neurological practice	Practice in neurologicl clinic	DC/ STP
11	12-13 Oct 2026	Holiday Neurological practice	Practice in neurologicl clinic Oral presentation	DC/ STP
12	19 - 20 Oct 2026	Neurological practice	Practice in neurologicl clinic	DC/ STP
13	26 - 27 Oct 2026	Neurological practice	Practice in neurologicl clinic	DC/ STP
14	2 - 3 Nov 2026	Neurological practice	Practice in neurologicl clinic	DC/ STP
15	9 - 10 Nov 2026	Neurological practice	Practice in neurologicl clinic Oral presentation and log book	DC/ STP