



TQF 3 Course Specification

Section 1 General Information

1. Course Code and Title

In Thai	สพวค ๔๔๑ หลักวิสัญญีและศัลยศาสตร์ทางสัตวแพทย์
In English	VSCL 441 Principles of Veterinary Anesthesia and Surgery

2. Number of Credits 1(1-0-2) (Theory – Practice - Self-study)
(Theory 1 hrs. Practice 0 hrs. Self-Study 2 hrs./week)

3. Curriculum and Course Type

3.1 Curriculum	Bachelor Degree Program (Thai)
3.2 Course Type	☐ Specific Course ☒ Compulsory Course ☐ Electives

4. Course Coordinator and Lecturer

4.1 Course Coordinator/ Course Responsible Lecturers

4.1.1 Lect. Somsak Wattananit (SWT)	Department of Clinical science and public health
Contact: 2217	E-mail: somsak.wat@mahidol.ac.th
4.1.2 Lect. Dr. Panithi Sukho (PSK)	Department of Clinical science and public health
Contact: 2256	E-mail: panithi.suk@mahidol.edu

4.2 Lecturers

4.2.1 Assist. Prof. Phingphol Charoonrat (PC)	Dept. of Clinical Science and Public Health
Contact: 2222	E-mail: phingphol.cha@mahidol.edu
4.2.2 Lect. Somsak Wattananit (SWT)	Dept. of Clinical Science and Public Health
Contact: 2217	E-mail: somsak.wat@mahidol.edu
4.2.3 Lect. Dr.Grisnarong Wongbandue (GW)	Dept. of Clinical Science and Public Health
Contact: 2237	E-mail: grisnarong.won@mahidol.edu
4.2.4 Lect. Dr. Panithi Sukho (PSK)	Dept. of Clinical Science and Public Health
Contact: 2256	E-mail: panithi.suk@mahidol.edu

4.2.5 Lect. Dr. Sekkarin Ployetch (SP)

Contact: 2212

Dept. of Clinical Science and Public Health

E-mail: sekkarin.plo@mahidol.edu

5. Semester/Class Level

5.1 Semester 1 / 2022 4th year student

5.2 Number of Students Allowed Approximately 80 Students

6. Pre-requisite

VSCL 328 Veterinary systemic pharmacology

7. Co-requisites

VSCL443 Clinical skill in veterinary science

8. Study Site Location Faculty of Veterinary Science, Mahidol University

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

30 June 2022

Section 2 Aims and Objectives

1. Course Goals

Provide learning processes and experiences in basic and core knowledge about principles of veterinary anesthesia and surgery. Including care for the animal under basic standard knowledge based on pre and post-anesthesia, anesthesia monitoring, hemostasis, fluid therapy, correction emergency, surgery preparation and surgical instruments, and suture selection and recovery. Aim to develop a correct and basic understanding of the learners sufficient for further studies in specific or advanced surgery courses.

2. Objectives of Course Development/Revision

2.1 Course Objectives

After the course was accomplished, the students should have been instructed regarding:

- Systematically explain about principles of sterilization, disinfection, and aseptic technique concerning the surgical procedure, site, patient, and personnel.
- Wound healing processes, factors affecting it, and standard treatments
- Various surgical instruments and demonstration of the use
- Animal status evaluation at pre-, intra-, and post-surgical operation
- Various pre-medications, generally and locally anesthetics, and pain management drugs suit situations
- Method of monitoring, properly interpreting data e.g., vital signs, and management of complications during anesthesia and surgery
- Properties of suture materials, knot, ligation, or sewing patterns corresponding to varieties of wound

2.2 Course-level Learning Outcomes: CLOs

On completion of the course, the students will be able to (CLOs)

- 1.CLO1 Distinguish between aseptic, sterilization, and disinfection, and describe correctly about surgical preparation of personnel and site
- 2.CLO2 Describe wound classification, healing process and affecting factors to healing, and how to manage a particular wound
- 3.CLO3 Choose proper surgical instruments for various surgical procedures and explain basic handling techniques
- 4.CLO4 Choose proper suture materials, suture pattern, and ligation for a specific wound
- 5.CLO5 Describe the principle of patient evaluation and monitoring during anesthesia
- 6.CLO6 Select proper fluid therapies, pre-medications, and local and general anesthetics to be able to maintain desired anesthetic depth
- 7.CLO7 Explain the principle of pain management and choose analgesia for specific surgery
- 8.CLO8 Describe the principle of inhalation anesthesia and anesthetic machine
- 9.CLO9 Explain possible anesthetic complications and correction
- 10.CLO10 Explain appropriate animal recovery and post-operative care

Section 3 Course Description and Implementation

1. Course Description

Principles of veterinary anesthesia, pain management, veterinary surgical procedures, sterilization and disinfection, surgical tie and suturing, hemostasis, wound healing process and treatment, fluid therapy in veterinary surgery, and specific surgical instruments used for diagnosis and treatment (English)

2. Number of hours per semester

Theory (hours)	Practice (hours)	Self-study (hours)
15	-	30

3. Number of Hours per Week for Individual Advice

One hour a week by directly contacting the course coordinator via telephone or email or making a personal appointment for individual advice. Otherwise allocate to a specific lecturer corresponding to the question

Section 4: Development of the expected learning outcomes

1. A brief summary of the knowledge or skills expected to develop in students; the course-level expected learning outcomes (CLOs)

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

- 1.CLO1 Distinguish between aseptic, sterilization, and disinfection, and describe correctly about surgical preparation of personnel and site
- 2.CLO2 Describe wound classification, healing process and affecting factors to healing, and how to manage a particular wound
- 3.CLO3 Choose proper surgical instruments for various surgical procedures and explain basic handling techniques
- 4.CLO4 Choose proper suture materials, suture pattern, and ligation for a specific wound
- 5.CLO5 Describe the principle of patient evaluation and monitoring during anesthesia

- 6.CLO6 Select proper fluid therapies, pre-medications, and local and general anesthetics to be able to maintain desired anesthetic depth
- 7.CLO7 Explain the principle of pain management and choose analgesia for specific surgery
- 8.CLO8 Describe the principle of inhalation anesthesia and anesthetic machine
- 9.CLO9 Explain possible anesthetic complications and correction
- 10.CLO10 Explain appropriate animal recovery and post-operative care

2. How to organize learning experiences to develop the knowledge or skills stated in number 1 and how to measure the learning outcomes

CLOs	Teaching and learning experience management	Learning outcomes measurements
CLO1	Lecture, and group discussion	written exam, and contributed to group discussion
CLO2	Lecture, and group discussion	written exam, and contributed to group discussion
CLO3	Lecture, and group discussion	written exam, and contributed to group discussion
CLO4	Lecture, and group discussion	written exam, and contributed to group discussion
CLO5	Lecture, and group discussion	written exam, and contributed to group discussion
CLO6	Lecture, and group discussion	written exam, and contributed to group discussion
CLO7	Lecture, and group discussion	written exam, and contributed to group discussion
CLO8	Lecture, and group discussion	written exam, and contributed to group discussion
CLO9	Lecture, and group discussion	written exam, and contributed to group discussion
CLO10	Lecture, and group discussion	written exam, and contributed to group discussion

SECTION 5 LESSON PLAN AND EVALUATION

1. Lesson Plan

Teaching Period	Topics/Details	Number of hours		Methods: Teaching Media	Lecturer
		Theory	Practice		
1	Aseptic, disinfection, sterilization in surgery	1	-	Lecture: ppt	SP
2	Wound healing process and management	1	-	Lecture: ppt	GW
3	Pain management and analgesic administration	1	-	Lecture: ppt	SP
4	Local anesthesia	1	-	Lecture: ppt	SP
5	Pre-operative patient evaluation and examination	1	-	Lecture: ppt	PC
6	Injectable anesthetics and administration	1	-	Lecture: ppt	SW
7	Inhalation anesthetics and machine	1	-	Lecture: ppt	PC
8	Stage of anesthesia, anesthesia monitoring	1	-	Lecture: ppt	PC
9	Anesthesia induction and maintenance	1	-	Lecture: ppt	PC
10	Surgical instruments and handling techniques	1	-	Lecture: ppt	GW
11	Suture materials and patterns	1	-	Lecture: ppt	GW
12	Surgical fluid therapies, bleeding control	1	-	Lecture: ppt	SW
13	Emergency during anesthesia and surgery and correction	1	-	Lecture: ppt	PSK
14	Recovery and post-operative care	1	-	Lecture: ppt	PSK
15	Discussion	2	-	Group discussion	PC SP PSK SW GW
	Total hours of the entire semester	15	-		

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

Learning Outcomes	Evaluation Method*		Weight (Percentage)
	MCQ/ MEQ	Group work	
1.CLO1 Distinguish between aseptic, sterilization, and disinfection, and describe correctly about surgical preparation of personnel and site	5.5	1.2	6.7
2.CLO2 Describe wound classification, healing process and affecting factors to healing, and how to manage a particular wound	5.5	1.2	6.7
3.CLO3 Choose proper surgical instruments for various surgical procedures and explain basic handling techniques	5.5	1.2	6.7
4.CLO4 Choose proper suture materials, suture pattern, and ligation for a specific wound	5.5	1.2	6.7
5.CLO5 Describe the principle of patient evaluation and monitoring during anesthesia	16.5	1.2	17.7
6.CLO6 Select proper fluid therapies, pre-medications, and local and general anesthetics to be able to maintain desired anesthetic depth	27.5	1.2	28.7
7.CLO7 Explain the principle of pain management and choose analgesia for specific surgery	5.5	1.2	6.7
8.CLO8 Describe the principle of inhalation anesthesia and anesthetic machine	5.5	1.2	6.7
9.CLO9 Explain possible anesthetic complications and correction	5.5	1.2	6.7
10.CLO10 Explain appropriate animal recovery and post-operative care	5.5	1.2	6.7
รวม	88	12	100

(2) Measurement and evaluation

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

Student measurement and evaluation

Part 1) MCQ/ MEQ exam	(88 %)
Midterm exam 7 topics	44%
final exam 7 topics	44%
Part 2) Assignment and group discussion	(12%)
total	100 %

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

In case that students received an 'F' grade, the course coordinator and the program's Teaching and Learning Development 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.

For the course with the mean score is higher than 75.00 and the minimum score is not less than 45.00. Students must receive the score higher than 47.50 to take to re-examination or extra-course work.

For the course with the mean score between 60.00 – 74.99, students must receive the score higher than 40.00. However, when the mean score is less than 60.00, students, then, should receive the score higher than 40.00 in order to take the 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's Teaching and Learning Development 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 6 Teaching Resources

1. Required Texts

- 1) Bojrab MJ. Current Techniques in Small Animal Surgery. (5th ed), Teton NewMedia, Jackson Wyoming; 2014.
- 2) Bojrab MJ. Disease Mechanisms in Small Animal Surgery. (3rd ed), Teton NewMedia. Jackson Wyoming; 2010.
- 3) Fossum TW. Small Animal Surgery. (5th ed), Elsevier. Philadelphia; 2018.
- 4) Grimm KA. Veterinary Anesthesia and Analgesia the 5th edition of Lump and Jones. Wiley-Blackwell; 2015.
- 5) Novakovski TD. BSAVA Manual of Canine and Feline Anesthesia and Analgesia, (3rd ed), Wiley-Blackwell; 2016.
- 6) Johnston SA. Veterinary Surgery: Small Animal Expert Consult. (2nd ed), Saunders; 2018.

2. Suggested Materials

- 1) Journal of Veterinary Surgery. Online ISSN: 1532-950X, ©American College of Veterinary Surgeons.
- 2) Journal of Veterinary Anaesthesia and Analgesia. ISSN: 1467-2987, Elsevier.
- 3) Journal of American Veterinary Medical Association. ISSN: 0003-1488, ©American Veterinary Medical Association.
- 4) Journal of American Animal Hospital Association. ISSN: 0587-2871, ©American Animal Hospital Association

2. Other Resources (if any)

Section 7 Evaluation and Improvement of Course Implementation

1. Strategy for Course Effectiveness Evaluation by Students

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. Strategy for Teaching Evaluation

The instructors or the course coordinators are assigned to conduct the evaluation as follows.

2.1 the students' evaluation for the instruction and overall outcomes of the course in accordance to criteria mentioned in No. 1 – Strategy for Course Effectiveness by Students.

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.

3. Teaching Improvement

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.

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

4. Verification of Standard of Learning Outcome for the Course

The verification of the standard of the Learning Outcome for the Course is conducted by the course coordinators based on the following aspects.

1. The goals of the learning outcomes are clear and feasible.
2. The learning experience is aligned with the expected goals.
3. The learning experience encourages the students to research and practice self-learning skills.
4. The evaluation methods are appropriate to assess the expected goals and learning experience.
5. The program applied the educational theory and the results from the previous evaluation to plan for improvement.

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

Relations between the course and the program

Table 1 Relations between the course and the PLOs

Course Name . Principles of Veterinary An- esthesia and Surgery	PLOs							
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
(Course Code) VSCL 441	R	-	-	-	-	-	-	-

Table 2 Relations between CLOs and PLOs

(Course Code) VSCL 441	PLOs							
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
1.CLO1 Distinguish between aseptic, sterilization, and disinfection, and describe correctly about surgical preparation of personnel and site	1.2							
2.CLO2 Describe wound classification, healing process and affecting factors to healing, and how to manage a particular wound	1.1 1.2							
3.CLO3 Choose proper surgical instruments for various surgical procedures and explain basic handling techniques	1.1 1.2							
4.CLO4 Choose proper suture materials, suture pattern, and ligation for a specific wound	1.1 1.2							
5.CLO5 Describe the principle of patient evaluation and monitoring during anesthesia	1.1 1.2							
6.CLO6 Select proper fluid therapies, pre-medications, and local and general anesthetics to be able to maintain desired anesthetic depth	1.1 1.2							
7.CLO7 Explain the principle of pain management and choose analgesia for specific surgery	1.1 1.2							

8.CLO8 Describe the principle of inhalation anesthesia and anesthetic machine	1.1							
	1.2							
9.CLO9 Explain possible anesthetic complications and correction	1.1							
	1.2							
10.CLO10 Explain appropriate animal recovery and post-operative care	1.1							
	1.2							