



Program: Doctor of Veterinary Medicine
 Course title Integrated Veterinary Research Process
 Course code VSCL406

Academic degree level ☒ Bachelor ☐ Graduate Diploma ☐ Master
☐ Higher Graduate Diploma ☐ Doctor
 Faculty / College / Institute: Faculty of Veterinary Science
 Department Clinical Sciences and Public health

TQF 3 Course Specification

Section 1 General Information

1. Course Code and Title

In Thai สพวค 406 บูรณาการกระบวนการวิจัยทางสัตวแพทย์
 In English VSCL 406 Integrated Veterinary Research Process

2. Number of Credits

2 (1-3-3)
 (Theory 2 hrs. Practice 3 hrs. Self-Study 3 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 Responsible Lecturers

Dr. Nathita Phumthanakorn	Department of Pre-clinic and Applied animal science
Phone number 02 441 5245-6	E-mail: nathita.phu@mahidol.edu
Dr. Roschong Boonyarittichaikij	Department of Clinical Science and Public health
Phone number 02 441 5245-6	E-mail: roschong.boo@mahidol.edu

4.2 Lecturers

Dr. Nathita Phumthanakorn	Department of Pre-clinic and Applied animal science
Phone number 02 441 5245-6	E-mail: nathita.phu@mahidol.edu
Dr. Roschong Boonyarittichaikij	Department of Clinical Science and Public health
Phone number 02 441 5245-6	E-mail: roschong.boo@mahidol.edu
Assoc.Prof.Panida Chanapiwat	Department of Clinical Science and Public health
Phone number 02 441 5245-6	E-mail: panida.cha@mahidol.edu
Assoc.Prof.Anuwat Wiratsudakul	Department of Clinical Science and Public health
Phone number 02 441 5245-6	E-mail: anuwat.wir@mahidol.edu
Assoc.Prof.Tanasak Changbanjong	Department of Pre-clinic and Applied animal science
Phone number 02 441 5245-6	E-mail: tanasak.cha@mahidol.edu
Asst.Prof.Sarin Suwanpakdee	Department of Clinical Science and Public health
Phone number 02 441 5245-6	E-mail: sarin.suw@mahidol.edu
Asst.Prof.Nawarus Prapaiwan	Department of Clinical Science and Public health



Program: Doctor of Veterinary Medicine
Course title Integrated Veterinary Research Process
Course code VSCL406

Academic degree level ☒ Bachelor ☐ Graduate Diploma ☐ Master
☐ Higher Graduate Diploma ☐ Doctor
Faculty / College / Institute: Faculty of Veterinary Science
Department Clinical Sciences and Public health

Phone number 02 441 5245-6

E-mail: nawarus.pra@mahidol.edu

Asst.Prof.Charoonluk Jirapataraset

Department of Pre-clinic and Applied animal science

Phone number 02 441 5245-6

E-mail: charoonluk.jir@mahidol.edu

Dr. Kripitch Suthammaporn

Department of Pre-clinic and Applied animal science

Phone number 02 441 5245-6

E-mail: kripitch.sut@mahidol.edu

5. Semester/Class Level

5.1 Semester 1-2/ Class Level 4

5.2 Number of Students Allowed Approximately 80 Students

6. Pre-requisite

VSPA 305

7. Co-requisites

-

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

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

22nd February 2022

Section 2 Aims and Objectives

1. Course Goals

1. Able to conducting study and collecting research data, and analyzing, criticizing, and researching
2. Capable of presenting a literature review
3. Integrate knowledge from research seminars and statistical bases connected to research
4. Plan and design an experiment, and also write and present research projects.

2. Objectives of Course Development/Revision

2.1 Course Objectives

This course aims to provide knowledge and abilities as follows:



Program: Doctor of Veterinary Medicine
Course title Integrated Veterinary Research Process
Course code VSCL406

Academic degree level ☒ Bachelor ☐ Graduate Diploma ☐ Master
☐ Higher Graduate Diploma ☐ Doctor
Faculty / College / Institute: Faculty of Veterinary Science
Department Clinical Sciences and Public health

Students will be able to read the information, collect data, evaluate, critique, and present their research in the form of a literature review. Capable of integrating knowledge from research seminars and statistical principles connected to research until able to conduct research questions, create the concept of planning and experimental design, which leads to drafting and presenting a research proposal.

2.2 Course-level Learning Outcomes: CLOs

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

1. CLO1 Collect research data relevant to the area of interest and adequately summarize the main topics
2. CLO2 Present the information in the form of a literature review appropriately
3. CLO3 Integrate knowledge from research seminars and statistical bases relevant to research appropriately
4. CLO4 Create a practical research project proposal.

Section 3 Course Description and Implementation

1. Course Description

Data collection, analysis and criticism, literature reviews and presentations, the integration of research seminar; applied statistics for data analysis, hypothesis, experimental design, research proposal writing and presentation; ethics of the animal use for research

2. Number of hours per semester

Theory (hours)	Practice (hours)	Self-study (hours)
15	45	45

3. Number of Hours per Week for Individual Advice

2 hrs/ week



Program: Doctor of Veterinary Medicine
Course title Integrated Veterinary Research Process
Course code VSCL406

Academic degree level ☒ Bachelor ☐ Graduate Diploma ☐ Master
☐ Higher Graduate Diploma ☐ Doctor
Faculty / College / Institute: Faculty of Veterinary Science
Department Clinical Sciences and Public health

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 Collect research data relevant to the area of interest and adequately summarize the main topics
2. CLO2 Present the information in the form of a literature review appropriately
3. CLO3 Integrate knowledge from research seminars and statistical bases relevant to research appropriately
4. CLO4 Create a practical research project proposal.

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			
	Group as- signment/ discussion	Presentation	-	-	-	Participate in class	Assignment quality	Group work	Presentation skill
CLO1	x					x	x	x	
CLO2		x							x
CLO3	x					x	x	x	
CLO4	x					x	x	x	



Academic degree level ☒ Bachelor ☐ Graduate Diploma ☐ Master

☐ Higher Graduate Diploma ☐ Doctor

Faculty / College / Institute: Faculty of Veterinary Science

Department Clinical Sciences and Public health

Program: Doctor of Veterinary Medicine

Course title Integrated Veterinary Research Process

Course code VSCL406

SECTION 5 LESSON PLAN AND EVALUATION

1. Lesson Plan

Teaching Period	Topics/Details	Number of hours		Methods: Teaching Media	Lecturer
		Theory*	Practice**		
1	Orientation, Course Description, introduction to writing a research outline, including research topics. hypothesis, objectives, literature review, experimental design materials & methods, statistical analysis, etc.	2	0	Lecture: ppt.	Nathita, Roschong
2	Research open house	1	1	Lecture, Group discussion: ppt	Nathita, Roschong, VSMU lec- turers
3	Scientific and Academic papers Searching	1	1	Lecture, group work: ppt	Nathita, lecturers
4	Principle of Literature review (1)	1	1	Lecture, group work/discussion	Roschong, lecturers
5	Principle of Literature review (2)	-	2	Group work/discussion	Lecturers
6	Principle of Literature review (3)	-	2	Group work/discussion	Lecturers
7	Topic and Scientific back- ground (1)	1	1	Lecture, group work/discussion	Roschong, lecturers



ademic degree level ☒ Bachelor ☐ Graduate Diploma ☐ Master

☐ Higher Graduate Diploma ☐ Doctor

Program: Doctor of Veterinary Medicine

Course title Integrated Veterinary Research Process

Course code VSCL406

Faculty / College / Institute: Faculty of Veterinary Science

Department Clinical Sciences and Public health

Teaching Period	Topics/Details	Number of hours		Methods: Teaching Media	Lecturer
		Theory*	Practice**		
8	Topic and Scientific background (2)	-	2	Group work/discussion	Lecturers
9	Programs for research e.g. sample size calculator program, reference program	1	1	Lecture, group work/discussion	Sarin
10	Hypothesis and literature review (1)	1	1	Lecture, group work/discussion	Nathita, lecturers
11	Hypothesis and literature review (2)	-	2	Group work/discussion	Lecturers
12	Objectives and Experimental designs (1)	1	1	Lecture, group work/discussion	Roschong, lecturers
13	Objectives and Experimental designs (2)	-	2	Group work/discussion	Lecturers
14	Writing research background, hypothesis, objectives	-	2	Group work/discussion	
15	Academic presentation	1	1	Lecture, group work/discussion	Thapanee
16	Proposal presentation 1 (background, hypothesis, objectives) (1)	-	2	Presentation	VSMU lecturers
17	Proposal presentation 1 (background, hypothesis, objectives) (2)	-	2	Presentation	VSMU lecturers
18	Materials and Methods (1)	1	1	Lecture, group work/discussion	Nathita, lecturers
19	Materials and Methods (2)	-	2	Group work/discussion	Lecturers
20	Materials and Methods (3)	-	2	Group work/discussion	Lecturers



Academic degree level ☒ Bachelor ☐ Graduate Diploma ☐ Master

☐ Higher Graduate Diploma ☐ Doctor

Program: Doctor of Veterinary Medicine

Course title Integrated Veterinary Research Process

Course code VSCL406

Faculty / College / Institute: Faculty of Veterinary Science

Department Clinical Sciences and Public health

Teaching Period	Topics/Details	Number of hours		Methods: Teaching Media	Lecturer
		Theory*	Practice**		
21	Research timeline, expected outcome, research expenses (1)	1	1	Lecture, group work/discussion	Roschong, lecturers
22	Research timeline, expected outcome, research expenses (2)	-	2	Group work/discussion	Lecturers
23	Statistical Analysis (1)	1	1	Lecture, group work/discussion	Sarin
24	Statistical Analysis (2)	1	1	Lecture, group work/discussion	Sarin
25	Statistical Analysis (3)	1	1	Lecture, group work/discussion	Sarin
26	Writing research proposal	-	2	Group work/discussion	Lecturers
27	Writing and presentation preparation of proposal	-	2	Group work/discussion	Lecturers
28	Proposal presentation (full proposal) (1)	-	2	Presentation	VSMU lecturers
29	Proposal presentation (full proposal) (2)	-	2	Presentation	VSMU lecturers
30	Proposal presentation (full proposal) (3)	-	2	Presentation	VSMU lecturers
	Total hours of the entire semester	15	45		



Program: Doctor of Veterinary Medicine
 Course title Integrated Veterinary Research Process
 Course code VSCL406

Academic degree level ☒ Bachelor ☐ Graduate Diploma ☐ Master

☐ Higher Graduate Diploma ☐ Doctor

Faculty / College / Institute: Faculty of Veterinary Science

Department Clinical Sciences and Public health

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)
	Participate in class	Assignment quality	Group work	Presentation skill	
CLO1 Collect research data relevant to the area of interest and adequately summarize the main topics	10		15		25
CLO2 Present the information in the form of a literature review appropriately				25	25
CLO3 Integrate knowledge from research seminars and statistical bases relevant to research appropriately		25			25
CLO4 Create a practical research project proposal		25			25
Total	10	50	15	25	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.

(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. Babbie ER. Survey research methods. Belmont, California: Wadworth Publishing Company, 1973.



2. Hulley SB. Cummings SR. Designing Clinical Research an Epidemiology Approach. Baltimore: Williams and Wilkins, 1988.
3. Polit D Hungler B. Nursing research: principles and methods 2nd ed. Philadelphia: J.B Lippincott Co., 1983.
4. Watson P. Statistics for Veterinary and Animal Science. Alexander Hunt Publishing, Blackwell Science Ltd, London, 1999.

2. Suggested Materials

- online search engine e.g., Pubmed, Sciencedirect, Google scholar

3. 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.



Program: Doctor of Veterinary Medicine
 Course title Integrated Veterinary Research Process
 Course code VSCL406

Academic degree level ☒ Bachelor ☐ Graduate Diploma ☐ Master
☐ Higher Graduate Diploma ☐ Doctor
 Faculty / College / Institute: Faculty of Veterinary Science
 Department Clinical Sciences and Public health

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	PLOs							
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
Integrated Veterinary Research Process (Course Code) VSCL406					P	R		



Academic degree level ☒ Bachelor ☐ Graduate Diploma ☐ Master

☐ Higher Graduate Diploma ☐ Doctor

Faculty / College / Institute: Faculty of Veterinary Science

Department Clinical Sciences and Public health

Program: Doctor of Veterinary Medicine
Course title Integrated Veterinary Research Process
Course code VSCL406

Table 2 Relations between CLOs and PLOs

VSCL406	PLOs							
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
CLO1 Collect research data relevant to the area of interest and adequately summarize the main topics					x	x		
CLO2 Present the information in the form of a literature review appropriately					x			
CLO3 Integrate knowledge from research seminars and statistical bases relevant to research appropriately					x	x		
CLO4 Create a practical research project proposal					x			



Program: Doctor of Veterinary Medicine
Course title Integrated Veterinary Research Process
Course code VSCL406

Academic degree level ☒ Bachelor ☐ Graduate Diploma ☐ Master
☐ Higher Graduate Diploma ☐ Doctor

Faculty / College / Institute: Faculty of Veterinary Science
Department Clinical Sciences and Public health