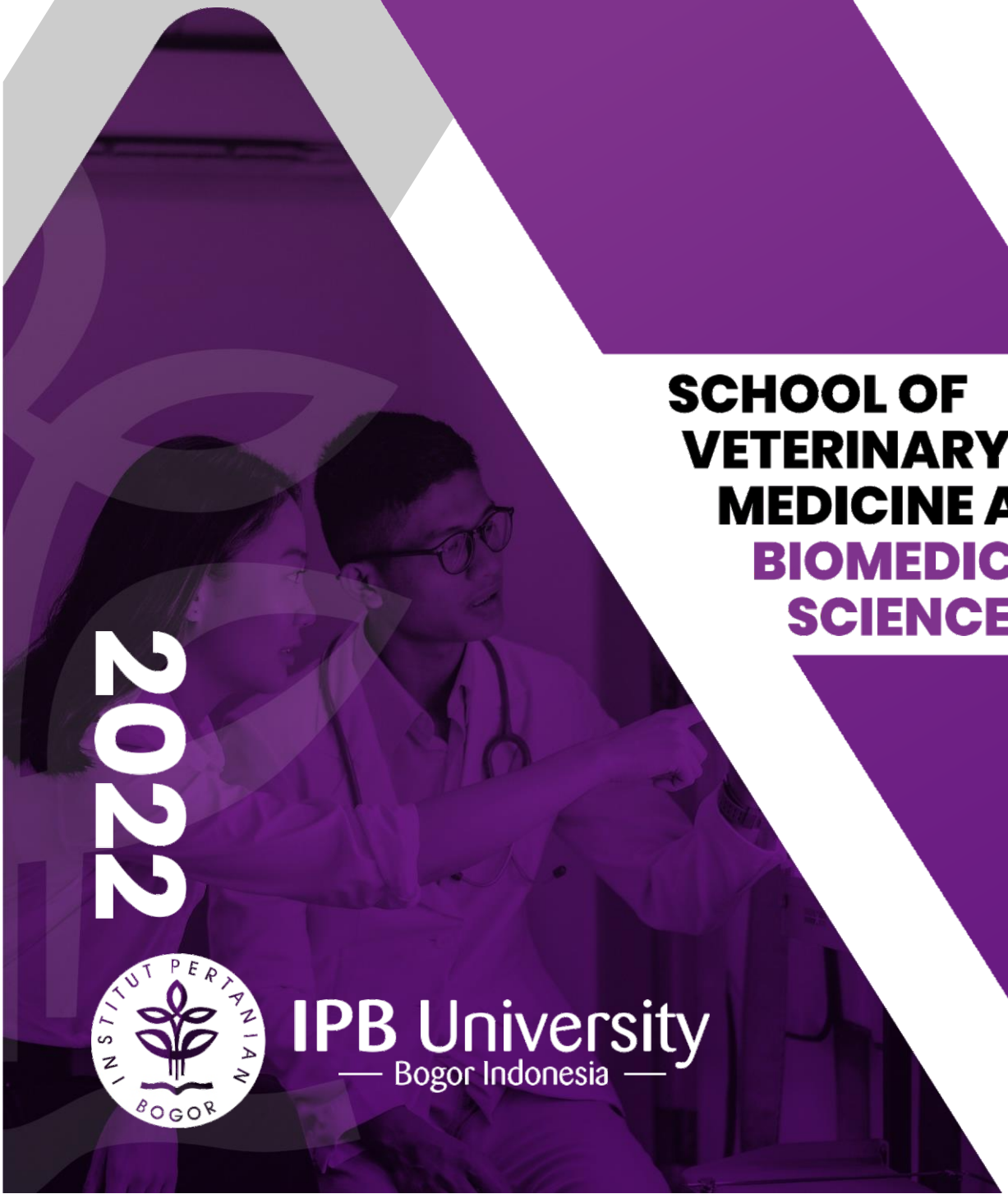
IPB University
Bogor Indonesia

Sekolah
Kedokteran Hewan
dan Biomedis

MODULE HANDBOOK



SCHOOL OF VETERINARY MEDICINE AND BIOMEDICAL SCIENCES

2022

IPB University
Bogor Indonesia

BVS Program

Bachelor Veterinary Science

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Bachelor Veterinary Science (BVS) Program

1. AGB100 Introduction Entrepreneurship

Module Name	Introduction Entrepreneurship
Module level, if applicable	Beginner
Code, if applicable	AGB100
Subtitle, if applicable	-
Courses, if applicable	AGB100 Introduction Entrepreneurships
Semester(s) in which the module is taught	1st (Odd) Semester
Person responsible for the module	
Lecturer	Team Teaching from Agribussines Departement
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in IPB University
Type of teaching, contact hours	Lecture (Face to face lecture): 1 hours x 2 weeks per semester
Workload	Class: 1 hours x 2 weeks = 2 hours Total: 2 hours
Credit points	1 SCH x (1.5) = 1.5 ECTS
Requirements according to the examination regulations	Registered in this course Minimum 80% attendance in this course
Recommended prerequisites	
Module objectives/intended learning outcomes	After taking this course, students will have new insights about the entrepreneurial potential and be motivated to develop themselves and be able to change the way of thinking in developing the entrepreneurial spirit.
Content	Students will be able to explain the role and importance of entrepreneurship which includes: (1) explaining the importance of entrepreneurship education; (2) mention and explain the category of entrepreneurs.

Study and examination requirements and forms of examination	**Cognitive:** Assignments **Psychomotor:** Practice **Affective:** Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.

Media employed	Classical teaching tools with white board and power poi presentation
Reading list	1. Ciputra. 2009. Ciputra Quantum Leap Entrepreneurship Mengubah Masa Depan Bangsa dan Masa Depan Anda. PT Elex Mediacomputindo, Jakarta. 2. Drucker, Peter, F. 1991. Inovasi dan Kewiraswastaan, Praktik dan Dasar-dasar. Alih Bahasa oleh Rusjdi Naib. Penerbit Erlangga. 3. Longenecker, Justin G. Carlos W. Moore, J. William Petty. 2000. Kewirausahaan, Manajemen Usaha Kecil. Penerbit Salemba Empat. 4. Wijayanto, Dian dan Sofuan Salim. 2007. The Secret Behind Your Dream : Dahsyatnya Kekuatan Impian yang Mempengaruhi Kesuksesan Anda. Sketsa Inti Media. Jakarta.

2. BIO100 Biology

Module Name	Biology
Module level, if applicable	Beginner
Code, if applicable	BIO100
Subtitle, if applicable	-
Courses, if applicable	BIO100 Biology
Semester(s) in which the module is taught	1st or 2nd Semester
Person responsible for the module	
Lecturer	Team teaching Biology Department
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in IPB University
Type of teaching, contact hours	Lecture (Face to face lecture): 2 hours x 14 weeks per semester
Workload	Class: 2 hours x 14 weeks = 28 hours Practical Class : 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 74 hours
Credit points	3 SCH x (1.5) = 4.5 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/ intended learning outcomes	1. Explaining the scope of biology, observe and explain the structure and metabolism of cells. 2. Observing and explaining the basic cellular reproduction and patterns of inheritance. 3. Observing and explaining the structure and expression of genes, and biotechnology.

	4. Observing and explaining the diversity, structure and biological functions of organisms: monera, protists, fungi, plantae, animalia. 5. Observing and explaining the ecology: population, community, ecosystem and bioconservation.
Content	This course explains the theories and basic principles of biology that form the basis for further courses in the major / department. The lecture begins by explaining the scope of biology and the origins of life, then proceeding to the Midterm Examination, lectures explaining the structure and function of biology at the cellular level, genetics and its application in biotechnology. In the next section until the Final Examination, the lecture explains about biodiversity and biological functions at the level of organisms (monera, protists, fungi, plantae, and animalia), population, community, ecosystem, and conservation biology. Examples and the application of each topic are given to help students understand basic principles and theories. This course is equipped with practicum as a support of theoretical knowledge provided in lectures. This course is offered in 1st semester (odd) and 2nd semester (even), as well as short semesters (over the year) specifically for repeaters.
Study and examination requirements and forms of examination	**Cognitive:** Midterm exam, Final exam, Quizzes, Assignments **Psychomotor:** Practice **Affective:** Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	Jane B. Reece, Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Robert B. Jackson. 2014. Campbell Biology.10th. Pearson Education, Inc. Neil A. Campbell, Jane B. Reece. 2008. Biology 8th. Pearson Benjamin Cummings: San Francisco.

3. EKO100 General Economics

Module Name	General Economics
Module level, if applicable	Beginner
Code, if applicable	EKO100
Subtitle, if applicable	-
Courses, if applicable	EKO100 General Economics
Semester(s) in which the module is taught	1st/2nd Semester
Person responsible for the module	
Lecturer	Team Teaching from Faculty of Economy and Management
Language	Indonesian
Relation to curriculum	Compulsory module for undergraduate program in IPB University
Type of teaching, contact hours	Type of teaching: Face to face lecture Contact hours: 3 hours x 14 weeks per semester
Workload	Class: 3 hours x 14 weeks = 42 hours Practical class: 2 hours x 14 weeks =28 hours Exam: 2 hours x 2 time = 4 hours Total = 74 hours
Credit points	3 SCH x (1.5) = 4.5 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcomes	After attending this course, student is able to understand of economics as a branch of science, understand the behavior of households, companies

	and markets in economic decision making, understand macroeconomics, problems and the actual conditions of Indonesian macroeconomics.
Content	This course is designed to provide a general overview of Indonesian economics and economics.
Study and examination requirements and forms of examination	**Cognitive:** Midterm exam, Final exam, Quizzes, Assignments **Psychomotor:** Practice **Affective:** Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Books for lecture class: 2. Lipsey. R. G., P. O Steiner, and D. D. Purpis. 1987. Economics. Harper International Edition. 3. Books for practical class: 4. Penuntun Responsi Ekonomi Umum. 2013. Departemen Ilmu Ekonomi (IE), Fakultas Ekonomi dan Manajemen (FEM). IPB. 5. Lipsey. R. G., P. O Steiner, and D. D. Purpis. 1987. Economics. Harper International Edition. 3 6. Gregory, M. 2006. Principles of Economics (Pengantar Ekonomi Mikro) Edisi 3. Salemba Empat.

4. FIS100 Physics

Module Name	Physics
Module level, if applicable	Beginner
Code, if applicable	FIS100
Subtitle, if applicable	-
Courses, if applicable	FIS100 Physics
Semester(s) in which the module is taught	1st (Odd) Semester
Person responsible for the module	Mersi Kurniati
Lecturer	1. Mersi Kurniati (Course Coordinator) 2. Sidikrubadi Pramudito (Practical Class Coordinator)
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in IPB University
Type of teaching, contact hours	Class Lecture: 2 hours x 14 weeks per semester
Workload	Class: 2 hours x 14 weeks = 28 hours Practical Class : 1 hours x 14 weeks = 14 hours Exam: 2 hours x 2 time = 4 hours Total = 46 hours
Credit points	3 SCH x (1.5) = 4.5 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	
Module objectives/intended learning outcomes	Student is able to use various physical formulations in the scope of solving simple physics problems and applying them to other fields.

Content	This course is taught to provide students with insight into the scope of mechanics, vibration waves, dynamics, electricity, electromagnetism and modern physics as well as providing a basis that is suitable for students who need basic physics.
Study and examination requirements and forms of examination	**Cognitive:** Midterm exam, Final exam, Quizzes, Assignments **Psychomotor:** Practice **Affective:** Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and visual presentation material
Reading list	-

5. IPB100 Religion Education

Module Name	Religion Education
Module level, if applicable	Beginner
Code, if applicable	IPB100
Subtitle, if applicable	-
Courses, if applicable	IPB100 Religion Education
Semester(s) in which the module is taught	1st and 2nd Semester
Person responsible for the module	Drs. Romli, M.Ag
Lecturer	Drs. Romli, M.Ag
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in IPB University
Type of teaching, contact hours	Type of teaching: Face to face lecture Contact hour: 2 hours x 14 weeks per semester
Workload	Class: 2 hours x 14 weeks = 28 hours Practical Class : 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 60 hours
Credit points	3 SCH x (1.5) = 4.5 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-

Module objectives/intended learning outcomes	1. Skilled in inventorying and analyzing verses of the Qur'an and Sunnah in the PAI Lab 2. Able to show and explain the verses of the Qur'an and Sunnah about science 3. Able to understand human concepts and human relations with religion 4. Able to decipher the 6 Pillars of Iman (Faith) to develop a noble personality 5. Able to demonstrate mahdhah and muamalah worship 6. Able to accustom noble behavior (morals) in the community environment.
Content	Religion Ediucation course is taught in order to equip students with insight in Islamic knowledge comprehensively (broadly and deeply), encourage students to study, study and live the verses of Allah SWT (Qauliyah and Kauniyah) and not to be dichotomous and to give an understanding of human nature who need a guide to life (al Islam), both individually and socially in order to achieve happiness in this world and the afterlife.
Study and examination requirements and forms of examination	**Cognitive:** Midterm exam, Final exam, Quizzes, Assignments **Psychomotor:** Practice **Affective:** Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	Mandatory Reading; Al-Qur'an and Translations, Islamic Religious Education Guidebook compiled by TIM PAI-IPB Additional Readings; 1. Miftah Faridz, 1999. Pokok-pokok ajaran Islam karya Mifta Faridz, Penerbit Pustaka. Jakarta 2. Yunahar Ilyas.1999. Kuliah Akhlak. LIPPI 3. Yusuf Qardhawy,1997.Pengantar Kajian Islam (terjmhn.). Pustaka Kautsar. Jakarta. 4. Hamzah Yaqub,1996. Etika Islam. CV. Diponegoro. Bandung 5. Yunahar Ilyas.2002. Kuliah Aqidah Islam. LPDI UMY. 6. Yusuf Qardhawy.1996. Tahuhid dan Fenomena Kemusyrikan (terjmhn). Pustaka Progresif.

	Surabaya 7. Shalih bin Fauzan. 1999. Kitab Tauhid I 8. (terjemahan).Darul Haq. Jakarta. Ismail Fauzi. Al-Islam dan Ilmu Pengetahuan

6. IPB106 Indonesian Language

Module Name	Indonesian Language
Module level, if applicable	Beginner
Code, if applicable	IPB106
Subtitle, if applicable	-
Courses, if applicable	IPB106 Indonesian Language
Semester(s) in which the module is taught	Odd/Even Semester
Person responsible for the module	-
Lecturer	Team Teaching
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in IPB University
Type of teaching, contact hours	Lecture (Face to face lecture): 1 hours x 14 weeks per semester
Workload	Lecture (class): 1 hours x 14 weeks = 14 hours Practical Class: 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 46 hours
Credit points	2 SCH x (1.5) = 3 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcomes	Student is able to understand and choose the right Indonesian vocabulary; skilled at writing papers according to their competencies; communicate verbally well; proud to speak Bahasa as the basis for applying the field of science according to its competence.
Content	Indonesian Language course includes in general subjects. This course is expected to shape the personality of students who are ethical, cultured in Indonesia, and proud of Indonesian language. The material provided in this course is history, position and function of Indonesian language, spelling (letter and punctuation), terminology, effective sentences: diction and reasoning, paragraphs,

	type of writing (description, narration, exposition, argumentation, and persuasion), reproduction: summary, abstract, or synthesis, quotation, reference system, and bibliography, writing scientific papers, and oral presentation techniques.
Study and examination requirements and forms of examination	**Cognitive:** Midterm exam, Final exam, Quizzes, Assignments **Psychomotor:** Practice **Affective:** Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Reading List	-

7. IPB107 Introduction to Agricultural Science

Module Name	Introduction to Agricultural Science
Module level, if applicable	Beginner
Code, if applicable	IPB107
Subtitle, if applicable	-
Courses, if applicable	IPB107 Introduction to Agricultural Science
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	Prof. Dr. Ir. Hadi Susilo Arifin, M.S.
Lecturer	Prof. Dr. Ir. Hadi Susilo Arifin, M.S. (Koordinaotor) Prof. Dr. Ir. Kukuh Murtilaksono, M.S. Prof. Dr. Ir. Ahmad Sulaeman, M.S. Dr. Ir. Budi Setiawan, M.S. Prof. Dr. Ir. I. Komang Gede Wiryawan Prof. Dr. Ir. Didi Sopandie, M.Agr. Dr. Ir. Sugeng Santoso, M.Agr" Dr. drh. Ligaya ITA Tumbelaka, SpMP., M.Sc Dr. Ir. Tania June, M.Sc Dr. drh. Koekoeh Santoso
Language	Indonesian
Relation to curriculum	Compulsory module for undergraduate program in IPB University
Type of teaching, contact hours	Type of teaching: Face to face lecture Contact hours: 2 hours x 14 weeks per semester
Workload	Class: 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 32 hours
Credit points	2 SCH x (1.5) = 3 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/ intended learning outcomes	After taking this course, students is able to explain agriculture in a broad sense and the supporting sciences.

Content	This course is designed and structured to take IPB University students to the world of agriculture in abroad sense.
Study and examination requirements and forms of examination	**Cognitive:** Midterm exam, Final exam, Quizzes, Assignments **Psychomotor:** Practice **Affective:** Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. AHN: Buku PIP Author AHN (Book 1-Soft File) 2. KM: Buku Kumpulan Makalah (Book 2-Soft File) 3. TGM: Buku Tantangan Generasi Muda (Hard File)

8. IPB108 English

Module Name	English
Module level, if applicable	Beginner
Code, if applicable	IPB108
Subtitle, if applicable	-
Courses, if applicable	IPB108 English
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	
Lecturer	Team Teaching
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in IPB University
Type of teaching, contact hours	Lecture (Face to face lecture): 1 hours x 14 weeks per semester
Workload	Class: 1 hours x 14 weeks = 14 hours Practical Class : 2 hours x 14 weeks = 28 hours Exam: 2 hours x 2 time = 4 hours Total = 46 hours
Credit points	3 SCH x (1.5) = 4.5 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/ intended learning outcomes	1. Able to applying "reading skills" in understanding texts in English; 2. Knowing the structure of language to support understanding 3. of texts in English;
Content	This course is designed and structured to guide IPB University students so they can face the era of globalization with sufficient English language. The topics discussed are knowledge of grammar and reading techniques that are very useful such as:

	skimming, scanning, guessing meanings from context, text organization and transferring information.
Study and examination requirements and forms of examination	**Cognitive:** Written test (Mid Test, Final Test, Assignment, Quiz **Psychomotor:** Practice **Affective:** assessed from the element /variables achievement, namely :(a) Contributions (attendance, active, role, initiative, language) , (b) Being on time , (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Abdulaziz, Helen Taylor, & Alfred D. Stover. 1980. Academic Challenges in Reading. Prentice-Hall, Inc.Englewood Cliffs, N.J. 2. Anson M. Chris, Schwegler A. Robert. 2001. The Longman Handbook for Writers and Readers, An Imprint of Addision Wesley Longman, Inc. 3. Dobbs, Carrie. 1989. Reading for a Reason. Prentice Hall Regents Englewood Cliffs, N.J. 4. Feverstein, Tamar and Miriam S. 1995. Enhancing Reading Comprehension in the Language Learning Clasroom. Alta Book Center Pub. San Fransisco, California. 5. Grellet, Francois. 1981. A Practical Guide to Reading Comprehension Exercises. Cambridge University Press. 6. Hornby, A.S. 1991. Oxford Advanced Learner's Dictionary. Oxford UP. 7. Karen Blanchard et.al. 1997. For Your Information 3. Longman. 8. Kranhlee, Karl. 1976. Reading Together: A Reading Activities Text. St. Martin Press. 9. Labarca. Angela and James M. Hendrickson. 1984. Our Global Village. Harcourt Brace Jovanovichy, Inc. 10. Latulippe, L.D. 1987. Developing Academic Reading Skills. Prentice Hall Regents, Englewood Cliffs, N.J. 11. Maingay, S. 1983. Making Sense of Reading: an Introduction to Reading Skills in English. Australia Nelson. 12. Marcelino, M. 1999. Materials for Foundations of Academic Writing Course. AMINEF, Jakarta. 13. Mickulecky, Beatrice S. 2004. More Reading Power, Reading for Pleasure, Comprehension Skills, Thinking Skills, Reading Faster. Pearson Education, Inc. 14. Oshima, Alice, and Ann Hogue. 1999. Writing Academic English. Longman. 15. Praninkas, Jean. 1975. Rapid Review of English Grammar. Prentice Hall. 16. Rowland, Black S. and Lisa Rosenthal. 1986. Academic English

and Study Skills for International Students. Prentice Hall. N.J.
17. Skykes, J.B. 1989. The Concise Oxford Dictionary. Oxford UP.
18. The British Council. 1979. Reading and Thinking: Exploring Functions. Oxford UP.
19. Torres G, Eunice. Smith L. Michael. English for Fisheries Technology. National Bookstore, Inc.
20. Valerie Kay. 1985. Biological Sciences "Developing Reading Skill in English". Pergamon Press.
21. Woods, Enid Nolan and David Foll. 1986. Penguin Advanced Reading Skills. Penguin Book Ltd. England.
22. https://en.wikipedia.org/wiki/Chart
23. https://en.wikipedia.org/wiki/Graph
24. https://www.ncsu.edu/labwrite/res/tablevsgraph/res-tablevsgraph.html
25. http://www.diffen.com/difference/Communism_vs_Fascism
26. http://www.diffen.com/difference/DNA_vs_RNA

9. IPB111 Civics Education

Module Name	Civics Education
Module level, if applicable	Beginner
Code, if applicable	IPB111
Subtitle, if applicable	-
Courses, if applicable	IPB111 Civics Education
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	
Lecturer	Team Teaching
Language	Indonesian
Relation to curriculum	Compulsory module for undergraduate program in IPB University
Type of teaching, contact hours	Type of teaching: Face to face lecture Contact hours: 2 hours x 14 weeks per semester
Workload	Class: 1 hours x 14 weeks = 14 hours Practical Class: 2 hours x 14 weeks =28 hours Exam: 2 hours x 2 time = 4 hours Total = 46 hours
Credit points	2 SCH x (1.5) = 3 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcomes	1. Students understand the vision, mission and goals of Civics Education. 2. Students identify disturbances and threats to the nation and the Republic of Indonesia and state defense efforts adapted to global challenges. 3. Students is able to analyze the formation of the Republic of Indonesia based on history and elements of the the state formation, analyze the concept of national integration. 4. Student is able to explain the meaning of nationalism. 5. Student is able to analyze the importance of the state constitution.

	6. Student is able to describe the atmosphere when making the 1945 Constitution. 7. Student is able to explain the meaning of the Preamble of the 1945 Constitution and its relationship with the Proclamation of Independence and the Body 8. Student is able to compare the implementation of the 1945 Constitution from time to time 9. Student is able to analyze and show changes in amendments to the 1945 Constitution, especially in state institutions as executors of people's sovereignty 10. Student is able to explain Pancasila as a system of philosophy and unity of precepts in Pancasila. 11. Student is able to analyze Pancasila as a source of values. 12. Describe the meaning of Pancasila as the basis of the state, comparing Pancasila as an open ideology with other ideologies, and its function as well as a national development paradigm. 13. Student is able to explain the problem of Indonesian citizenship. 14. Student is able to categorize the rights and obligations of Indonesian citizens. 15. Student is able to link the implementation of democracy with the enforcement of human rights. 16. Analyzing the implementation of democracy in Indonesia since the old order, new order and reform 17. Analyzing the efforts to promote, respect and uphold human rights in Indonesia and the world. 18. Student is able to relate the concept of geopolitics and archipelago insight. 19. Student is able to explain the concept of Indonesian territory. 20. Student is able to describe the implementation of national insights in national development. 21. Student is able to explain Indonesia's national resilience and implementation 22. Student is able to explain analyzing problems and formulating politics and national strategies. 23. Student is able to explain the principles of good governance in public organizations and state administration. 24. Student is able to explain the implementation of regional autonomy. Student is able to categorize corrupt acts and the importance of efforts to prevent corruption

Content	Civics education gives understanding to students as the next generation to apply the fundamental values of the nation and state of Indonesia in effort to strengthen awareness of national defense, strengthen attitudes and behaviors of citizens, master in knowledge of the basic problems of national and state life, and to be pro-active towards change. That occurs in order to realize the integration of science and technology and development.
Study and examination requirements and forms of examination	**Cognitive:** Midterm exam, Final exam, Quizzes, Assignments **Psychomotor:** Practice **Affective:** Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Membangun Kesadaran Bela Negara Dr. Ir. Parlaungan Adil Rangkuti,M.Si. IPB Press 2. Paradigma Baru Pendidikan Kewarganegaraan. Winarno,S.Pd, M.Si. PT.Bumi Aksara: 2008 3. Cerdas Kritis dan Aktif Berwarganegara, Pendidikan Kewarganegaraan Untuk Perguruan Tinggi. Heru Herdiawanto,M.Si dan Jumanta Hamdayama,M.Si, Erlangga: 2010 4. Panduan Kuliah Pendidikan Pancasila untuk Perguruan Tinggi. Elly M.Setiadi.M.Si. Gramedia: 2007 5. Pendidikan Kewarganegaraan: Demokrasi, Hak Asasi Manusia, Masyarakat Madani. ICCE UIN dan Prenada Media: 2003

10. KIM101 Chemistry

Module Name	Chemistry
Module level, if applicable	Beginner
Code, if applicable	KIM101
Subtitle, if applicable	-
Courses, if applicable	KIM101 Chemistry
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	
Lecturer	Team Teaching
Language	Indonesian
Relation to curriculum	Compulsory module for undergraduate program in IPB University
Type of teaching, contact hours	Type of teaching: Face to face lecture Contact hours: 2 hours x 14 weeks per semester
Workload	Class: 2 hours x 14 weeks = 28 hours Practical Class: 3 hours x 14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 74 hours
Credit points	3 SCH x (1.5) = 4.5 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcomes	After taking this course, students will be able to explain the chemical linkages in life processes related to aspects of daily life. After attending this lecture, students will be able to explain the relationship between chemistry and life, physical and chemical properties, atoms as basic components of elements, compounds formed from elements, mixtures, pure and impure materials, periodic tables.

Content	Look at the world of atoms and molecules: understanding the language of chemistry.
Study and examination requirements and forms of examination	**Cognitive:** Midterm exam, Final exam, Quizzes, Assignments **Psychomotor:** Practice **Affective:** Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	Suchocki J. 2007. Conceptual Chemistry: Understanding Our World of Atoms and Molecules. Ed. Ke-3. San Fransisco (US): Pearson Benjamin Cummings.

11. KPM130 General Sociology

Module Name	General Sociology
Module level, if applicable	Beginner
Code, if applicable	KPM130
Subtitle, if applicable	-
Courses, if applicable	KPM130 General Sociology
Semester(s) in which the module is taught	Odd/Even Semester
Person responsible for the module	
Lecturer	Team Teaching from Faculty of Human Ecology
Language	Indonesian
Relation to curriculum	Compulsory module for undergraduate program in IPB University
Type of teaching, contact hours	Type of teaching: Face to face lecture Contact hours: 2 hours x 14 weeks per semester
Workload	Class: 2 hours x 14 weeks = 28 hours Practical Class: 3 hours x14 weeks = 42 hours Exam: 2 hours x 2 time = 4 hours Total = 74 hours
Credit points	3 SCH x (1.5) = 4.5 ECTS
Requirements according to the examination regulations	Registered in this course Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcomes	After attending this course student is able to understand the concepts, analyze situations and social changes in society, and identify social realities and problems at the level of groups, organizations, institutions, communities, and global by considering

	power and authority, ecology and gender. In addition, student is able to conduct sociological studies, communicate the results of studies for decision making based on qualitative and quantitative approaches that can be accounted for.
Content	This course explains the history and development of Sociology; Sociology as an Perspective; Social Interaction and Structure; Society and Culture; Social Institutions; Group; Organization and Bureaucracy; Social Stratification; Power and Authority; Communication Patterns, Forms of Society and Patterns of Ecological Adaptation; Gender and Development; and Social Change & Development
Study and examination requirements and forms of examination	**Cognitive:** Midterm exam, Final exam, Quizzes, Assignments **Psychomotor:** Practice **Affective:** Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Charon, J.M. 1980. The Meaning of Sociology. Alfred Publishing Co. Inc. America. 2. Calhoun, C., et.al. 1994. Sociology (6th edition). McGraw-Hill, Inc. USA. 3. Wibisono, Koento. 1982. Arti Perkembangan Menurut Filsafat Positivisme Auguste Comte. Yogyakarta: Gadjah Mada University Press. 4. Gillin, J.L. & J.P. Gillin, 1954. Cultural Sociology (3rd printing). New York: The Macmillan Co. 5. Maiolo, J., et.al., 1991. Study Guide to Accompany Bassis, Gelles and Levine: Sociology An Introduction. McGraw-Hill, Inc. USA. 6. Soekanto, S., 1990. Sosiologi Suatu Pengantar. Jakarta: Rajawali Press. 7. Geertz, C. 1976. Agricultural Involution: process of ecological change in Indonesia. Berkeley: University of California Press. 8. Herskovits, M.J. 1955. Cultural Anthropology. New York: Alfred A. Knopf. 9. Koentjaraningrat (Ed.). 1979. Manusia dan Kebudayaan di Indonesia. Jakarta: Penerbit Djambatan. 10. Kluckhohn, F.R. 1961. “Dominant and variant value-orientation” in: FR Cluchohn & HA Murray (Eds.), Personality in Nature, Society and Culture.

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22. Bierstedt, R. 1982. The Social Order. Bombay: Tata McGraw Hill Publishing.
23. Koentjaraningrat, 1979, “Isi konsep desa di Indonesia” dalam Koentjaraningrat (Ed.), Masyarakat Desa di Indonesia Masa Ini. Jakarta: Yayasan Penerbit Fakultas Ekonomi Universitas Indonesia.
24. Merton, R.K. 1967. Social Theory and Social Structure. New York: The Free Press.
25. Bassis, M.S., R.G. Jelles, and A. Levine, 1991, Sociology An Introdution, New York: Mc Graw Hill.
26. Berelson, B. & G.A. Steiner. 1964. Human Behaviour. Harcourt: Brase & World.
27. Etzioni, A.1982. Organisasi-organisasi Modern. Jakarta: UI Press.
28. Himes (1976). The Study of Sociology An Introduction. Ilinois: Scott, Foresman and Co.
29. Schoorl, J.W., 1982. Modernisasi. Jakarta: Gramedia.

	30. Soekanto, S. 1983. Struktur Sosil Masyarakat. Jakarta: Gramedia. 31. Weber, Max. 1974. The Theory of Social and Economic Organization. New York: The Free Press. 32. Bierstedt, R. 1970. The Social Order An Introduction to Sociology. New York: McGraw Hill Book Co. 33. Calhoun, C. et al. 1994. Sociology An Introduction. McGraw Hill, Inc. 34. Sorokin, P.A. 1959. Social and Cultural Mobility. London: Collier-Macmillan Ltd. 35. Wertheim, W.F. 1959. Indonesian Society in Transition A Study of Social Change. S'Gravenhage: W van Hoeve. 36. Nisbet, R.A. 1993. The Sociological Tradition. London: Transaction Publishers. 37. Mulyana, D. 2001. Ilmu Komunikasi: Suatu Pengantar. Bandung: Remaja Rosdakarya. 38. Lerner, D. 1978. Memudarnya Masyarakat Tradisional. Yogyakarta: Penerbit Universitas Gadjah Mada. 39. Wright, H. N. 1997. Komunikasi: Kunci Perkawinan Bahagia. Yogyakarta: Gloria. 40. Odum E.P., 1971 41. Ellen C. Semple (1911), 42. Carl Ritter dan Ellsworth Huntington. Alfred L. Kroeber. 1939 43. Arnold Toynbee (1947), 44. Harold & Margaret Sprout (1965) Moris Treilich (1967). 45. Julian H. Steward (1955). 46. Geertz (1963) 47. Ada Konflik Mangrove (Kompas, Senin 9 Juni 2013) 48. Proyek Kanal Banjir Bebaskan Jakarta dari Banjir? (M Clara Wresti dan Iwan Santosa 25 49. Petani Berhadapan dengan Kekuasaan (Sri Hartati Samhadi, Ahmad Arif, Maria Hartiningsih, Kompas, 11 April 2008) Bappenas 2004 Konferensi Lingkungan hidup stocholm, swedia, 1972 50. Fakih. 1999. 51. ILO Indonesia. 1997. 52. KPP-PA. 2010. 53. Yulfita Raharjo. 2012. Sosialisasi PMK No. 93/PMK.02/2011 Bagi Eselon 1 dan II Bappenas. Jakarta: Bappenas 54. Simatauw et all. 2001. 55. Harper, C.L . 1989. Exploring Social Change. New Jersey: Prentice-Hall.

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12. AT101 Fundamentals of Mathematics

Module Name	Fundamentals of Mathematics
Module level, if applicable	Beginner
Code, if applicable	MAT101
Subtitle, if applicable	-
Courses, if applicable	MAT101 Fundamentals of Mathematics
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	Windiani Erliana
Lecturer	Team Teaching from Departmant of Mathematic
Language	Indonesian
Relation to curriculum	Compulsory module for undergraduate program in IPB University
Type of teaching, contact hours	Type of teaching: Face to face lecture Contact hours: 2 hours x 14 weeks per semester
Workload	Class: 2 hours x 14 weeks = 28 hours Practical class: 2 hours x 14 weeks =28 hours Exam: 2 hours x 2 time = 4 hours Total = 60 hours
Credit points	3 SCH x (1.5) = 4.5 ECTS
Requirements according to the examination regulations	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcomes	1. Student is able to explain basic mathematical concepts (interval, inequality and absolute value; function; limit and continuous function; derivative; integral; matrix; and system of linear equations). 2. Able to use basic mathematical techniques to solve simple mathematical problems. 3. Able to apply basic mathematical concepts and techniques to solve applied problems.

Content	This course discusses the basic concepts of mathematics which include concepts of inequality and absolute value, function and model, limit and continuous function, derivative, integral, matrix and system of linear equations with more emphasis on aspects of calculation.
Study and examination requirements and forms of examination	**Cognitive:** Midterm exam, Final exam, Quizzes, Assignments **Psychomotor:** Practice **Affective:** Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Tim Penulis. Diktat Kuliah Landasan Matematika. Departemen Matematika FMIPA IPB, Bogor, 2017. 2. Varberg D, Purcell EJ, Rigdon SE. 2011. Kalkulus. Ed ke-9. Jilid 1. Susila IN, penerjemah. Jakarta (ID): Penerbit Erlangga. Terjemahan dari: Calculus. 9th Ed. 3. Stewart J. 2002. Kalkulus. Ed ke-4. Jilid 1. Susila IN, Gunawan H, penerjemah. Jakarta (ID): Penerbit Erlangga. Terjemahan dari: Calculus. 4th Ed.

13. FKH 30A Veterinary Profession and Animal Welfare

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	Odd Semester
Person responsible for the module	drh. Fadjar Satrija, M.Sc., Ph.D.
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, as well as independent learning guided by provided handout, PowerPoint, quizzes, other relevant references and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 63 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Midterm and Final Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group assignments: 1 hour x 14 weeks = 14 hours/semester Quiz preparation : 1 hour x 3 weeks = 3 hours/semester Examination preparation : 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Veterinary Parasitology: Endoparasite, Viral Diseases, Bacterial and Mycotic Diseases, Internal Medicine II, Veterinary Specialty Surgery I and II, as well as Veterinary Profession and Animal Welfare.
Module objectives/intended learning outcomes	1. Students can explain the duties and authorities of the veterinarian profession related to animal health, animal welfare, and veterinary public health 2. Students can explain the scope of animal welfare as well as various animal welfare concepts (the Five Freedoms Principle and 3R / Replacement, Reduction, and Refinement) 3. Students can explain various welfare concerns that often occur in livestock, companion animals, animal transportation, laboratory animals, and wildlife in ex situ conservation

Content	This course discusses the duties and authorities of the veterinary profession and its role in society related to animal health, animal welfare, and veterinary public health; Emphasis is placed on the duties and responsibilities of the profession relating to the implementation and maintenance of animal welfare. Furthermore, students will learn the definition and scope of animal welfare, as well as various animal welfare concepts, including the Five Freedoms and the 3R Principles; Welfare concerns that often occur in livestock, companion animals, laboratory animals, and wildlife in ex situ conservation
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Paper and Presentation
Study and examination requirements	**Cognitive**: Midterm Exams, Final Exam, Problem-Based Learning Paper, Problem-Based Learning Presentation, and Quizzes. **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course.
Reading list	1. World Organisation for Animal Health [OIE]. 2012. Terrestrial Animal Health Code: Section 7. Animal Welfare. 21st Ed. 2. World Society for the Protection of Animals. 2013. Concepts in Animal Welfare. 3rd Edition.

14. FKH 297 Scientific Methodology

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	3rd and 4th (odd and even) Semester
Person responsible for the module	Drh. I Ketut Mudite Adnyane, M.Si, PhD, PAVet
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through problem-based learning group assignments given with the provided handout, PowerPoint, other books, and other relevant publications as well as audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 95 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 14 weeks = 14 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Bahasa Indonesia and Statistical Method.
Module objectives/intended learning outcomes	Students can explain scientific philosophy, make experimental designs, present scientific and popular data based on scientific ethics and the rules to use laboratory animals. Students can explain writing procedures and make scientific proposals and present these result in the form of oral presentations and posters.

Content	This course explains scientific philosophy, procedures for library research and scientific writing, research/activity design and proposal writing, ethics in the use of experimental animals, data and presentation, abstract writing, creation of abstract and conclusions, scientific publications and popular scientific writing.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Project Proposal (Problem-Based Learning) : written paper Group Poster (Problem-Based Learning) : paper or online media Group Presentation (Problem-Based Learning)
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Group Project (Problem-Based Learning), and Problem-Based Learning Presentation **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Jones WP. 1977. Writing Scientific Papers and Reports. 6th Eds. WBC, Iowa. 2. Hannagan. TJ. 1982. Mastering Statistics. The Macmillan Press Ltd 3. Nazir M. 1988. Metode Penelitian. Ghalia Indonesia 4. [PPKI] Pedoman Penulisan Karya Ilmiah IPB. edisi 4. 2020. IPB Press. 5. Panduan PKM (Program Kreatifitas Mahasiswa) Nasional tahun 2021.

15. FKH 302 Animal Behavioural Science

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	4th and 5th (even and odd) Semester
Person responsible for the module	Dr. Drh. Heru Setijanto, PAVet
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Elective course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments from the provided handout, PowerPoint, other relevant references and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 62 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Midterm and Final Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 14 weeks = 14 hours/semester Individual Assignment: 1 hour x 2 weeks = 2 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Veterinary Physiology I.
Module objectives/intended learning outcomes	After completing this course, students can explain aspects of animal behaviour which include behavioural patterns, behavioural systems, social interactions and behavioural deviations, especially on livestock/pets. This course is the basis for studying veterinary sciences in general, especially in the fields of diagnostics, reproduction, veterinary public health and animal management/governance.

Content	This course discusses the many aspects of animal behaviour, especially livestock/pets. Topics covered include behavioural patterns, behavioural systems, social interactions and behavioural deviance. Also discussed are the typical behaviours of farm animals such as cows, goats, sheep, chickens and companion animals (pets).
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Problem-Based Learning Paper, Problem-Based Learning Presentation, and Individual Assignment. **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course.
Reading list	1. Jensen, P.(Ed). 2009. The Ethology of Domestic Animals: an Introductory Text. 2nd edition. CAB International. UK. 2. Hart, B.L. 1985. The Behavior of Domestic Animals. W.H. Freeman and Company. USA. 3. McFarland, D. 1985. Animal Behaviour: Psychology, Ethology and Evolution. Longman Scientific and Technical. UK. 4. Craig, J.V. 1981. Domestic Animal Behavior. Prentice-Hall, Inc. USA. 5. Hinde. R.A. 1970. Animal Behavior: A Synthesis of Ethology and Comparative Psychology. 2nd Edition. McGraw-Hill Book Company. USA.

16. FKH 303 Laboratory Animal Health Management

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	6th and 7th (even and odd) Semester
Person responsible for the module	Dr. Drh. Sri Estuningsih, MSi, APVet
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Elective course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments from the provided handout, PowerPoint, other relevant references and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 71 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Midterm and Final Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 10 weeks = 14 hours/semester Individual Assignments: 1 hour x 11 weeks = 11 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Pathology.
Module objectives/intended learning outcomes	After the completion of this course, students can explain the definition, classification, type, use, anatomy, physiology, maintenance and health management, laboratory animal disease, biomedical waste handling, handling, manipulation, sample collection, implementation of ethical principles and animal welfare including procedures for preparing appropriate research proposals for submission review the ethics of using laboratory animals.

Content	This course explains the definition, classification, type, use, anatomy, physiology, maintenance and health management, handling, manipulation, sample collection, disease, biomedical waste handling, animal welfare, as well as the submission of the ethical clearance approval process for the use of laboratory animals.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Problem-Based Learning Paper, Problem-Based Learning Presentation, and Individual Assignments **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course.
Reading list	1. Fox, J (Ed). 2015. Laboratory Animal Medicine 3rd Edition (in American College of Laboratory Animal Medicine Series). Academic Press. 2. National Research Council of the National Academies. 2011. The Guide for the Care and Use of Laboratory Animals 8th Edition. National Academic Press. 3. Hau, J and Schapiro SJ (Ed). 2011. Handbook of Laboratory Animal Science 3rd Edition, Volumes I-II. CRC Press.

17. FKH 304 Biomedical Instrumentation

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	4th and 5th (even and odd) Semester
Person responsible for the module	Drh. Rr. Soesatyoratih, MSi
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Elective course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, problem-based learning group paper and presentation assignments, as well as independent learning through quizzes where study materials are provided in the form of handout, PowerPoint, other relevant references and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 64 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Midterm and Final Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1hour x 8 weeks = 14 hours/semester Quiz preparation: 1hour x 4 weeks = 4 hours/semester Examination preparation: 1hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Biology and General Physics.
Module objectives/intended learning outcomes	1. Students can explain the functions and uses of various supporting tools in animal operations and care activity. 2. Students can explain the functions and uses of various supporting tools in laboratory activity.
Content	This course explains the functions and uses of various supporting devices and how to operate each device as well as its application to animals in an integrative and comprehensive way to support veterinary medicine.

Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Problem-Based Learning Paper, Problem-Based Learning Presentation, and Quizzes. **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course.
Reading list	1. Anita Sharma, Neelima Anup, Rakesh K. Tekade, Chapter 20 - Achieving sterility in biomedical and pharmaceutical products (part-I): thermal, chemical, and filtration sterilization, Editor(s): Rakesh K. Tekade, In Advances in Pharmaceutical Product Development and Research, The Future of Pharmaceutical Product Development and Research, Academic Press, 2020, Pages 695-788, ISBN 9780128144558 2. Biological Safety Cabinets 3. https://ehs.umich.edu/research-clinical/equipment-tools/biological-safety-cabinets/ 4. Disinfection and Sterilization 5. https://www.cdc.gov/infectioncontrol/guidelines/disinfection/index.html 6. Mualla F, Aubreville M, Maier A. Microscopy. 2018 Aug 3. In: Maier A, Steidl S, Christlein V, et al., editors. Medical Imaging Systems: An Introductory Guide [Internet]. Cham (CH): Springer; 2018. Chapter 5. Available from: https://www.ncbi.nlm.nih.gov/books/NBK546149/ doi: 10.1007/978-3-319-96520-8_5 7. Ohlendieck and Harding 2018 Centrifugation and Ultracentrifugation 8. https://www.nottingham.ac.uk/-sczsteve/Ohlendieck%20and%20Harding%202018.pdf 9. Rizal A.2014.Instrumentasi Biomedis. Graha Ilmu Yogyakarta 10. Seymour C and Novakovski TD.2007.BSAVA of Canine and Feline Anaesthesia and Analgesia.2 ed British Small Animal Veterinary Association 11. Water Purification Strategies in the Research Laboratory 12. https://www.labcompare.com/342322-Water-Purification-Strategies-in-the-Research-La boratory/

18. FKH 305 Aquatic Animal Health Management

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	6th (even) Semester
Person responsible for the module	Dr. drh. Agustin Indrawati, M.Biomed
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Elective course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments from the provided handout, PowerPoint, other relevant references and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 72 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Midterm and Final Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 12 weeks = 12 hours/semester Quiz preparation : 1 hour x 14 weeks = 14 hours/semester Examination preparation : 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Pathology.
Module objectives/intended learning outcomes	Students can explain communicatively and interpretatively about the habitat and pathology of aquatic animals and their immune systems related to the incidence of infectious and non-infectious diseases and how to prevent and treat them.
Content	This course discusses the definition of aquatic animals related to Animal Husbandry and Animal Health Law, classifications and habitats of aquatic animals, and their benefits. Furthermore, students will also learn about various types of infectious and non-infectious diseases that are often found and their immune systems and how to prevent and treat them.

Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Problem-Based Learning Papers, Problem-Based Learning Presentations, and Quizzes. **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course.
Reading list	1. Moller H, Anders K. 1986. Diseases and Parasites of Marine Fishes. Verlag Möller Kiel German Federal Republic. 2. Woo PTK. 2006. Fish Diseases and Disorders, Volume 1 : Protozoan and Metazoan Infections. Second Edition. (UK): King's Lynn. 3. Buchmann K, J Bresciani 2001. Parasitic Diseases of Freshwater Trout. Denmark 4. Permen Kelautan dan Perikanan Nomor 37/PERMEN-KP/2019 5. Permen Kelautan dan Perikanan RI Nomor 13/PERMEN – KP/2019 6. Edward J, Noga. 1999. Fish Disease Diagnosis and Treatment. 7. Valerie Inglish, Ronald j. Roberts and Nial R.B. 1994. Bacterial diseases of Fish 8. Francess MD, Leslie AD, Karyl RW. 2015. Handbook of Marine Mammal Medicine. 9. FAO. 2001. Finfish Diseases 10. OIE. 2009 .Manual of Diagnostic Tests for Aquatic Animals 11. Genten FE, Terwinghe AD. 2009, Atlas of Fish 12. Smith SA. 2019. Fish Disease and Medicine 13. Roberts RJ. 2012. Fish Pathology 14. Terio KD, McAloose JSt. 2018. Pathology of Wildlife and Zoo animals

19. FKH 306 Wild Animal Health Management

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	6th snd 7th (even and odd) Semester
Person responsible for the module	Dr. Drh. Ligaya ITA Tumbelaka, SpMP, MSc
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Elective course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments from the provided handout, PowerPoint, other relevant references and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 72 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Midterm and Final Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 8 weeks = 8 hours/semester Quiz preparation : 1 hour x 3 weeks = 3 hours/semester Examination preparation : 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Pathology.
Module objectives/intended learning outcomes	Students can explain communicatively and interpretatively about the habitat and pathology of aquatic animals and their immune systems related to the incidence of infectious and non-infectious diseases and how to prevent and treat them.

Content	Lecture activities will be carried out in 14 meetings. Seven lectures by way of pulpit lectures and seven meetings using discussion topics in Problem Base Learning (PBL). In the implementation of PBL, students will be divided into small groups, discuss, make a report on the results of the discussion, present the results and discuss the results of discussions from other groups. The assessment of the implementation of face-to-face PBL follows the assessment rubric that has been provided. Evaluation of learning outcomes will be carried out in the Mid-Semester Examination and the End-semester Examination.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Problem-Based Learning Papers, Problem-Based Learning Presentations, and Quizzes. **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course.

Reading list	1. Kusumawati D, Sarjana IKW . 2015.Buku Bahan Ajar Satwa Liar – Gadjah Mada University Press. 2. Alikodra HS. Teknik Pengelolaan Satwaliar. IPB Press. 3. Miller RE and Fowler ME. 2015. Fowler's Zoo and Wild Animal Medicine, Volume 8. Sunder's Publisher 4. Undang-Undang Republik Indonesia Nomor 18 Tahun 2009 Tentang Peternakan Dan Kesehatan Hewan 5. Undang-undang (UU) tentang Karantina Hewan, Ikan, dan Tumbuhan. 2019. 6. IUCN Red List of Threatened Species. https://www.iucn.org/resources/conservation-tools/iucn-red-list-threatened-species 7. Surtono T dan Mardistuti A. 2003. Pelaksanaan Cites di Indonesia. Jakarta : Japan International Coopertion Agency (JICA) 8. Menteri Lingkungan Hidup Dan Kehutanan Republik Indonesia. 2019. Peraturan menteri lingkungan hidup dan kehutanan Nomor p.22/ Menlhk/ Setjen/ Kum.1/5/2019 Tentang Lembaga konservasi 9. Menteri Lingkungan Hidup Dan Kehutanan Republik Indonesia.1990. Undang-Undang Republik Indonesia Nomor 5 Tahun 1990 Tentang Konservasi Sumber Daya Alam Hayati Dan Ekosistemnya 10. Direktur Jenderal Perlindungan Hutan Dan Konservasi Alam. 2011. Peraturan Direktur Jenderal Perlindungan Hutan Dan Konservasi Alam Nomor : P. 9/Iv-Set/2011 Tentang Pedoman Etika Dan Kesejahteraan Satwa Di Lembaga Konservasi

20. FKH 307 Poultry Health Management

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	6th and 7th (even and odd)) Semester
Person responsible for the module	Prof. drh. Ekowati Handharyani, MSi., PhD.
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Elective course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, as well as independent learning guided by provided handout, PowerPoint, other relevant references and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 46 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Midterm and Final Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Examination preparation : 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Pathology.
Module objectives/intended learning outcomes	After completing this course, student can explain communicatively and interpretively the basic principles of poultry health management, namely sanitation, preventive action and control of disease incidence; and can carry out procedures for the implementation of poultry farming in an effort to increase production, prevent and control diseases in poultry farm/industries.

Content	This course provides an understanding of poultry health management which includes several basic principles such as sanitation, disease prevention measures and disease control. The discussion of this course covers the host-agent relationship with the environment, livestock physical facilities, sources of infection and preventive measures, environmental sanitation and disinfection, flock and hatchery management, vaccination and monitoring, outbreak control (outbreak), as well as diagnostic procedures.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test
Study and examination requirements	**Cognitive:** Midterm Exams, and Final Exam **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course.
Reading list	a. Office Internationale Des Epizooties. 2000. OIE Manual of Standards for Diagnostics Tests and Vaccines. 4th ed. Paris, France. OIE b. Poultry Health and Management : Elst. 2003. David Sainsbury c. Poultry Health Management and Biosecurity. 2022. (https://www. clemson edu/ extension/4h/programs/ag-animals/livestock/files/youthacademy/ poultry/module4/poultry-health-management.pdf) d. Poultry Biosecurity. 2022. Iowa State University (https://poultrybiosecurity.org/do-not-bring-disease-to-site-video) e. Diseases of Poultry. 2013. Editors: David E Swayne et al. f. Diseases of Poultry. 2022. Ivan Dinev (https://www.thepoultrysite.com/publications//diseases-of-poultry) g. A pictorial guidebook on poultry diseases; diagnostic techniques and their effective treatment. 2018. Nawab A. et al h. PP No. 47 Tahun 2014 Tentang pengendalian dan penanggulangan penyakit hewan

21. FKH 400 Veterinary Ethics and Legislation

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	8th (even) Semester
Person responsible for the module	Prof. Srihadi Agungpriyono, DVM, PhD
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, as well as independent learning guided by provided handout, PowerPoint, other relevant references and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Midterm and Final Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group assignments: 1 hour x 14 weeks = 14 hours/semester Examination preparation : 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Veterinary Parasitology: Endoparasite, Viral Diseases, Bacterial and Mycotic Diseases, Internal Medicine II, Veterinary Specialty Surgery I and II, as well as Veterinary Profession and Animal Welfare.
Module objectives/intended learning outcomes	After completing this course, student can explain and apply / practice ethics in attitude and behaviour and explain about the implementation of various veterinary activities and practices based on the applicable laws and regulations.
Content	This subject is compulsory for students of veterinary medicine. This course provides an insight into veterinary ethics and its implementation in various practical activities of veterinary profession in animal welfare, animal health, husbandry management, quality assurance of food of animal origin, animal quarantine and environmental health and their correlation with the laws and acts in veterinary practices.

Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Paper and Presentation
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Problem-Based Learning Paper, and Problem-Based Learning Presentation **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course.
Reading list	1. Tannenbaum J. 1989. Veterinary Ethics. 1st Edition. William & Wilkins. Baltimore 2. OIE 2009. OIE Guidelines in Veterinary Legislation. 3. UU Nomor 18 Tahun 2009 tentang Peternakan dan Kesehatan Hewan 4. UU Nomor 41 Tahun 2014 tentang Perubahan Atas Undang-Undang Nomor 18 Tahun 2009 Tentang Peternakan dan Kesehatan Hewan 5. UU Nomor 21 Tahun 2019 tentang Karantina Hewan, Ikan dan Tumbuhan 6. PP Nomor 95 Tahun 2012 tentang Kesehatan Masyarakat Veteriner dan Kesejahteraan Hewan 7. PP Nomor 47 Tahun 2014 tentang Pengendalian Dan Penanggulangan Penyakit Hewan 8. PP Nomor 3 tahun 2017 tentang Otoritas Veteriner 9. Permentan Nomor 14 Tahun 2017 tentang Klasifikasi Obat Hewan 10. Permentan Nomor 61 Tahun 2015 tentang Pemberantasan Penyakit Hewan 11. Permentan Nomor 03 Tahun 2019 tentang Pelayanan Jasa Medik Veteriner 12. Permentan Nomor 08 Tahun 2019 Tentang Pejabat Otoritas Veteriner dan Dokter Hewan Berwenang

22. AFF 211 Veterinary Anatomy I

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	2nd (even) Semester
Person responsible for the module	Dr. Drh. Chairun Nisa', M.Si, PAVet
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group assignments as well as the provided handout, PowerPoint other books, and publications that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 113 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 4 sessions = 8 hours total sessions Practicum Exams: 2 hours x 4 sessions = 8 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 14 weeks = 14 hours/semester Individual Assignment: 1 hour x 14 weeks = 14 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Biology.

Module objectives/intended learning outcomes	Students are able to describe the structure and function of various connective tissues, cartilage, skeletal bones (osteology) with the type and movement of joints, skeletal muscles, and muscles in visceral organs, and their comparisons in some vertebrates animals. Students are able to explain the static structure and dynamic movement of animals as well as its comparison in other vertebrate animals, which are the basis for treatment in accordance within animal welfare principles. Students are able to describe the functional arrangement of neurons, the division of the central nervous system and the peripheral nervous system (spinal cord with spinal nerves, and the brain with cranial nerves), the autonomic nervous system in its role as a regulator of body functions, as well as its comparison in several vertebrate animals which forms the basis for appropriate treatment within the principles of animal welfare. Students are able to describe the structure and function of the sensory organs and their comparisons in some vertebrate animals which includes: skin and its derivatives (hair, nails, horns, sweat glands and udder glands), eyes, ears, nose and tongue, and their respective roles in shaping animal behaviour that are the basis for treatment in accordance with animal welfare principles.
Content	This course explains the locomotion system of animals, the functional structure of neurons, the central nervous system, the peripheral nervous system and the autonomic nervous system. In addition, it also discusses the integumentum communae which includes skin, nails and their derivatives, as well as the sensory organs like the eyes, ears, nose and tongue.
Examination forms	Midterm Exam 1 : paper or online based test Midterm Exam 2 : paper or online based test Midterm Exam 3 : paper or online based test Final Exam : paper or online based test
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course

Reading list	1. Angevine, J.B and C.W. Cotman. 1981. Principles of Neuroanatomy. New York: Oxford Univ.Press. 2. Colville T, Bassert JM. 2002. Clinical Anatomy & Physiology for Veterinay Technicians. Missouri (US): Mosby Inc. 3. Dyce KM., Sack WO, Wensing CGJ. 1996. Textbook of Veterinary Anatomy. Philadelphia: WB. Saunders Co. 4. Getty R. 1975. Sisson and Grossman's. Anatomy of The Domestic Animal. 5 th edition. Philadelphia: WB. Saunders Co. 5. Nurhidayat, Nisa' C, Agungpriyono S, Setijanto H, Novelina S, Supratikno. 2020. Didi Soesetiadi, Osteologi dan Miologi Veteriner. Bogor: IPB Press.

23. AFF 214 Veterinary Anatomy II

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	3rd (odd) Semester
Person responsible for the module	Dr. Drh. Savitri Novelina, M.Si, PAVet
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments and quizzes from the provided handout, PowerPoint, other references that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 119 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 4 sessions = 8 hours total sessions Practicum Exams: 2 hours x 3 sessions = 6 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 14 weeks = 14 hours/semester Individual Assignment: 1 hour x 14 weeks = 14 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Veterinary Anatomy I.

Module objectives/intended learning outcomes	Students can describe the viscerum site, morphology and function of the organs in the circulation, respiration, digestion, urogenital and endocrine organ systems of domestic animals, livestock and poultry. Students can compare the viscerum site, morphology and function of the circulatory, digestive and urogenital organ systems in Pisces, amphibians and reptiles. Students can explain the approach of anatomical knowledge for animal treatments in diagnostics of internal medicine, surgical, reproductive, veterinary public health, pathology and animal welfare.
Content	This course explains the anatomy of the organs of the body of domestic animals which includes organs from blood and lymph circulation system, respiration system, digestion system, genitalia and urination system, as well as the endocrine system. This course also explains the anatomy of poultry organs which have a distinctive structure compared to other domestic animals.
Examination forms	Midterm Exam 1 : paper or online based test Midterm Exam 2 : paper or online based test Midterm Exam 3 : paper or online based test Final Exam : paper or online based test Practicum Exam 1 : paper or online based test Practicum Exam 2 : paper or online based test Practicum Exam 3 : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	Cognitive: Midterm Exams, Final Exam, Problem-Based Learning Paper, Problem-Based Learning Presentation, Individual Assignments, Practicum Exam 1-3, and Quizzes Psychomotor: Practicums Affective: Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course.

Reading list	1. Dyce KM, Sack WO, Wensing CJG. 2017. Textbook of Veterinary Anatomy. WB Saunders Co., Philadelphia. 2. Getty, R. 1975. Sisson and Grossman's Anatomy of The Domestic Animal. 5 th Eds. WB Saunders Co, Philadelphia. 3. [ICVGAN] International Committee on Veterinary Gross Anatomical Nomenclature. 2017. Nomina Anatomica Veterinaria. 6th ed. Hannover (DE): Editorial Commitee of WAVA. 4. Nurhidayat, C. Nisa', S. Agungpriyono, H. Setijanto, S. Novelina, Supratikno, K.Sigit, 2013. Atlas Neuroangiologi dan Organologi Kambing. FKH IPB. IPB Press. Bogor 5. Nurhidayat, C. Nisa', S. Agungpriyono, H. Setijanto, S. Novelina, Supratikno, K.Sigit, 2013. Atlas Osteologi dan Miologi Veteriner. FKH IPB. IPB Press. Bogor 6. Nurhidayat, C. Nisa', S. Agungpriyono, H. Setijanto, S. Novelina, Supratikno, K.Sigit, 2013. Osteologi dan Miologi Veteriner. FKH IPB. IPB Press. Bogor 7. McLelland J. 1990. A Colour Atlas of Avian Anatomy. Wolf Publishing. England 8. May. 1970. Anatomy of the Sheep. University of Quensland Press. 9. Soesetiadi, D. 2005. Penuntun Praktikum Anatomi Veteriner II: Neuro-Angiologi dan Organologi. Laboratorium Anatomi, FKH-IPB 10. Setijanto, H. 1998. Diktat Kuliah Anatomi dan Histologi Unggas. Lab. Anatomi, Jurusan Anatomi, Fakultas Kedokteran Hewan IPB. Bogor. 11. Stanley HD, Goody PC, Evan SA, Stickland NC. 1996. Color Atlas of Veterinary Anatomy. Vol. 3. The Dog and Cat. Mosby. London.

24. AFF 311 Veterinary Topographic Anatomy

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	4th (even) Semester
Person responsible for the module	Dr. Drh. Nurhidayat, MS, PAVet
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments and quizzes from the provided handout, PowerPoint, other references that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 119 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Practicum Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 3 hours/semester Individual Assignment: 1 hour x 3 weeks = 3 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Veterinary Anatomy II

Module objectives/intended learning outcomes	1. Students can explain the topographic anatomical elements of the horse and dog bodies. 2. Students can link the topographic anatomical components to its clinical importance. 3. Students can elaborate the topographic anatomy knowledge in animal handling to achieve animal welfare efforts during future practices. 4. Students can implement the knowledge of topographic anatomy of animals to study other fields of veterinary sciences in general, but especially the diagnostics, surgical, and internal medicine field.
Content	This course explains the topographical anatomy elements or organs of several areas of the body in domestic animals, especially the forelegs and hind legs, head, and neck of horses and dogs.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Midterm Practicum Exam : paper or online based test Final Practicum Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Midterm Practicum Exam, Final Practicum Exam, Problem-Based Learning Papers, Problem-Based Learning Presentations, Individual Assignments, and Quizzes **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course

Reading list	1. Dyce KM, Sack WO, Wensing CJG. 2017. Textbook of Veterinary Anatomy. WB Saunders Co., Philadelphia. 2. Getty, R. 1975. Sisson and Grossman's Anatomy of The Domestic Animal. 5th Eds. WB Saunders Co, Philadelphia. 3. [ICVGAN] International Committee on Veterinary Gross Anatomical Nomenclature. 2017. Nomina Anatomica Veterinaria. 6th ed. Hannover (DE): Editorial Commitee of WAVA. 4. Nurhidayat, Nisa' C, Setijanto H, Agungpriyono S, C, Novelina S, Supratikno, Sigit K. 2018. Atlas Anatomi Topografi Kuda. IPB Press, Bogor 5. Popesko P. 1978. Atlas of Topographical Anatomy of the Domestic Animals. WB Saunders Co, Philadelphia. 6. Schumer A, H. Wilken. B Vollmerhaus. KH Habermehl. 1976. Lehrbuch der Anatomie der Haustiere. Band III. Verlag Pul Parey. Berlin und Hamburg. 7. Sigit K, Nurhidayat, Setijanto H, Agungpriyono S, Nisa' C, Novelina S, Supratikno. 2018. Anatomi Topografi Kuda. IPB Press, Bogor 8. Smith BJ, 1999, Canine Anatomy. Lippincott Williams and Wilkins A Walter Kluwer Co. Philadelphia. 9. Stanley HD, Goody PC, Evan SA, Stickland NC. 1996. Color Atlas of Veterinary Anatomy. Vol. 3. The Dog and Cat. Mosby. London. 10. Way RF, DG Lee. 1983. The Anatomy of the Horse. Breakthrough. Milwood, New York.

25. AFF 225 Veterinary Physiology I

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	3rd (odd) Semester
Person responsible for the module	Drh. Isdoni, M. Biomed
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments and quizzes from the provided handout, PowerPoint, other references that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 122 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class (Laboratory Sessions) : 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Practicum Exam: 2 hours x 1 session = 2 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 14 weeks = 14 hours/semester Individual Assignment: 1 hour x 14 weeks = 14 hours/semester Quiz preparation : 1 hour x 11 weeks = 11 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Biology and General Biochemistry.

Module objectives/intended learning outcomes	After completing this course, students can understand and explain the processes and functions of the physiological system which includes the organization of physiology, cell physiology, nervous system, sensory system, endocrine system, muscle physiology, blood physiology and immune system in domestic animals in an integrated and comprehensive manner using the concept and physiological principles to support diagnosis in various other fields in veterinary medicine.
Content	This course is given to students who already have general knowledge of biology, physics and chemistry. This course presents the basic functions of cells and their concepts and principles in biological control systems through a discussion of various animal physiologic systems. Lectures will cover the scope of physiology, cell structure and function, physiological concepts and principles of the nervous system, sensory system, endocrine system, muscle physiology, blood and body immune system. Each topic will also include a discussion of deviations in physiologic function that will result in the occurrence of a disease or disorder. At the end of the course, students can integrate all the topics obtained and be able to form the basis of veterinary science.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Practicum Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exam, Problem-Based Learning Papers, Problem-Based Learning Presentations, Individual Assignments, and Quizzes **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Cunningham, J. G. 2013. Textbook of Veterinary Physiology 5th Ed. WB. Saunders Company. 2. Sherwood L. 2007. Fisiologi Manusia Dari Sel ke Sistem. Ed 6. EGC, Jakarta. 3. Silverthorn DU. 2013. Human Physiology An Integrated Approach 6th ed. Pearson, Benjamin Cummings. San Francisco. 4. Reece. W.O (editors). 2015. Dukes' Physiology of Domestic Animals. 13th Ed. John Wiley & Sons, Inc. 5. Widmaier EP, Raff H, Strang KT. 2008. Vander's Human Physiology : The Mechanism of Body Function. 11thed. McGraw-Hill Publishing Company, New York.

26. AFF 226 Veterinary Physiology II

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	4th (even) Semester
Person responsible for the module	Dr. Drh. Aryani Sismin Satyaningtijas, MSc.
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments and quizzes from the provided handout, PowerPoint, other references that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 105 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class (Laboratory Sessions): 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Practicum Exam: 2 hours x 1 session = 2 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 11 weeks = 11 hours/semester Individual Assignment: 1 hour x 14 weeks = 14 hours/semester Quiz preparation : 1 hour x 11 weeks = 11 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Veterinary Physiology I and Medical Biochemistry.

Module objectives/intended learning outcomes	After completing this course, students can explain the processes and functions of the physiological system which includes the cardiovascular system, respiratory system, digestive system, metabolism, growth and thermoregulation, excretory and osmoregulation systems as well as reproductive and lactation systems in domestic animals in an integrated and comprehensive manner using physiological concepts and principles to support diagnosis in the field of veterinary medicine.
Content	This course is given to students that have obtained basic knowledge of biology, physics, chemistry and physiology I. This course combines the functions of each cell and organ in a unified functional system that is carried out in a coordinated and integrative manner. The systems discussed are the cardiovascular system, respiratory system, digestive system, metabolism, growth and thermoregulation, kidney and osmoregulation as well as reproduction and lactation. More in depth learning of physiological processes is carried out through practicum. Each topic will also include a discussion of deviations in physiologic function that will result in the occurrence of a disease or disorder. At the end of the lecture, students are expected to be able to integrate all the topics obtained and implement the understanding as basis for veterinary science knowledge.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Practicum Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exam, Problem-Based Learning Papers, Problem-Based Learning Presentations, Individual Assignments, and Quizzes **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course

Reading list	1. Cunningham, J. G. 2013. Textbook of Veterinary Physiology 5th Ed. WB. Saunders Company. 2. Sherwood L. 2007. Fisiologi Manusia Dari Sel ke Sistem. Ed 6. EGC, Jakarta. 3. Silverthorn DU. 2013. Human Physiology An Integrated Approach 6th ed. Pearson, Benjamin Cummings. San Francisco. 4. Reece. W.O (editors). 2015. Dukes' Physiology of Domestic Animals. 13th Ed. John Wiley & Sons, Inc. 5. Widmaier EP, Raff H, Strang KT. 2008. Vander's Human Physiology : The Mechanism of Body Function. 11thed. McGraw-Hill Publishing Company, New York.

27. AFF 212 Veterinary Histology I

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	3rd (odd) Semester
Person responsible for the module	Drh. Adi Winarto, PhD, PAVet
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments and quizzes from the provided handout, PowerPoint, other references that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 98 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 1 hour x 14 weeks = 14 hours/semester Practicum Class (Laboratory Sessions): 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 6 weeks = 6 hours/semester Individual Assignment: 1 hour x 14 weeks = 14 hours/semester Quiz preparation : 1 hour x 11 weeks = 11 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Biology.

Module objectives/intended learning outcomes	1. Student can explain the concept of histology and be able to explain and compare structure and functions of cells and basic tissues histologically. This includes epithelial tissues, connective tissues, muscles, and nerves 2. Students can use a microscope properly and correctly 3. Students can explain the general technique of making histological preparations and interpret a histological picture of tissue. 4. Students can identify and compare the structure of cells and basic tissues of the animal body histologically. 5. Students can make ground bone preparations.
Content	This course explains the basics of histology and the approximation methods used in histology to study the structure and components of basic tissues in animals as the basis of knowledge in studying organs and organ systems, as well as other veterinary science fields such as diagnostics, internal medicine, immunology and veterinary pathology.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam , Problem-Based Learning Papers, Problem-Based Learning Presentations, Individual Assignments, and Quizzes **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course

Reading list	1. Bacha WJ, Bacha LM. 1990. Color Atlas of Veterinary Histology. 2nd. Lippincott Williams & Wilkins. A Wolters Company. Tokyo. 2. Bergman RA, Afif AK, Heidger PM. 1996. Histology. WB Saunders Company. New York. 3. Bloom W, Fawcett DW. 1969. A Textbook of Histology. WB Saunders Company. New York. 4. Dellman HD. 1992. Textbook of Veterinary Histology. Lea and Febiger. Philadelphia. 5. Dellman HD, Carithers JR. 1996. Cytology and Microscopic Anatomy. Williams and Wilkins. Baltimore. 6. Habel RE, Biberstein EL. 1957. Fundamentals of The Histology of Domestic Animals. George Banta Company, Inc. 7. Ross MH, Romrell LJ, Kaye GI. 1995. Histology, A Text and Atlas. 3rd ed. Williams and Wilkins. Baltimor. 8. Telford IR, Bridgman CF. 1995. Introduction to Functional Histology. 2nd ed. Harper Collins College Publishers. New York.

28. AFF 215 Veterinary Histology II

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	4th (even) Semester
Person responsible for the module	Prof. Drh. Tutik Wresdiyati, PhD, PAVet
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments and quizzes from the provided handout, PowerPoint, other references that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 94 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 1 hour x 14 weeks = 14 hours/semester Practicum Class (Laboratory Sessions): 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 2 weeks = 2 hours/semester Individual Assignment: 1 hour x 14 weeks = 14 hours/semester Quiz preparation : 1 hour x 11 weeks = 11 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Veterinary Histology I.
Module objectives/intended learning outcomes	After this course, student can explain and compare the histological structure and function of the organ systems which includes the circulation system, lymphatic and immune system, respiratory system, digestive system, urination system, male and female reproductive system, endocrine system, as well as the integument, eyes and ears.

Content	This course explains the basic understanding of organology and histology of organs that make up systems in the body such as blood circulation system, lymphatic and immune system, respiratory system, digestive system, urinary system, reproductive system, endocrine system, as well as the integumentary system, eyes and ears.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Problem-Based Learning Papers, Problem-Based Learning Presentations, Individual Assignments, and Quizzes **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Bacha WJ, Bacha LM. 1990. Color Atlas of Veterinary Histology. 2nd. Lippincott Williams & Wilkins. A Wolters Company. Tokyo. 2. Bergman RA, Afif AK, Heidger PM. 1996. Histology. WB Saunders Company. New York. 3. Bloom W, Fawcett DW. 1969. A Textbook of Histology. WB Saunders Company. New York. 4. Dellman HD. 1992. Textbook of Veterinary Histology. Lea and Febiger. Philadelphia. 5. Dellman HD, Carithers JR. 1996. Cytology and Microscopic Anatomy. Williams and Wilkins. Baltimore. 6. Habel RE, Biberstein EL. 1957. Fundamentals of The Histology of Domestic Animals. George Banta Company, Inc. 7. Ross MH, Romrell LJ, Kaye GI. 1995. Histology, A Text and Atlas. 3rd ed. Williams and Wilkins. Baltimor. 8. Telford IR, Bridgman CF. 1995. Introduction to Functional Histology. 2nd ed. Harper Collins College Publishers. New York.

29. AFF 213 Embryology and Developmental Genetics

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	3rd and 4th (odd and even) Semester
Person responsible for the module	Drh. Mokhamad Fahrudin, PhD
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments and quizzes from the provided handout, PowerPoint, other references that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 96 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hour x 14 weeks = 28 hours/semester Practicum Class (Laboratory Sessions): 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Practicum Midterm and Final Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 11 weeks = 11 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Biology.
Module objectives/intended learning outcomes	After taking this course, students can explain communicatively and interpretatively about the development of organ systems, congenital malformations, genetic factors that influence development, and related biotechnological applications.

Content	This course explains the process of growth and development of animals, starting from the origin and formation of gametes (gametogenesis), fertilization (fertilization), embryonic development (embryogenesis) and organ development (organogenesis) originating from the embryonic germ layer. In addition, genetic and environmental factors on growth and development are also discussed. Macroscopic and microscopic practicums are provided to support the understanding of each subject.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Midterm Practicum Exam : paper or online based test Final Practicum Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Midterm Practicum Exam, Final Practicum Exam, Problem-Based Learning Papers, and Problem-Based Learning Presentations **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course

Reading list	1. Bellairs R, Osmond M. 2005. Atlas of Chick Development. Academic Press. 2. Gilbert SF. 2003. Developmental Biology. 7nd Ed. Sinaeur Associates Inc. Publisher. Massachusetts. 3. Hafez ESE. 2000. Reproduction in Farm Animal. 7th Ed. Lea & Febiger.Philadelphia. 4. Klug WS, Cummings MR, Spencer CA, Palladino MA. 2011. Concepts of Genetics. Pearson. 10th ed. Boston. USA 5. MacGeady TA, Quinn PJ, FitzPatrick, Ryan MT. 2004. Veterinary Embryology. Blackwell Publishing. 6. Noden DM, de Lahunta A. 1985. The Embriology of Domestic Animal, Developmental Mechanisms and Malformation. Williams & Wilkins. London. 7. Pritchard DJ. 1986. Foundation of Developmental Genetics. Taylor and Francis Ltd. London UK. 8. Sadler TW. 1991. Langman Embriologi Kedokteran. Ed. 5. EGC Penerbit Buku Kedokteran. Jakarta. 9. Schoenwolf GC. 1995. Laboratory Studies of Vertebrate and Invertebrate Embryos. 7th Ed. Prentice Hall, Englewood Cliffs. New Jersey. 10. Senger PL. 2003. Pathways to pregnancy and parturition. 2nd ed. Current Conceptions, Inc. Washington. USA. 11. Snustad DP, Simmons MJ. 2012. Principles of Genetics. 6th ed. John Willey & Sons, Inc. USA 12. Wolpert L, Beddington R, Jessel T, Lawrence P, Meyerowitz E, Smith J. 2002. Principles of Development. Oxford University Press. New York. USA.

30. AFF 331 Pharmacology I

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	5th (odd) Semester
Person responsible for the module	Dr. Drh. Aulia Andi Mustika, M.Si
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, problem-based learning group paper and presentation assignments with information provided from handout, PowerPoint, other references that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 57 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hour x 14 weeks = 28 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 11 weeks = 11 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Veterinary Physiology II.
Module objectives/intended learning outcomes	After completing the required courses in the appropriate study program, students are able to apply the basic principles of pharmacology to select and make the right combination of drugs based on their target organ, class, mechanism of action, pharmacokinetics, indications, contraindications, administration, side effects, and toxicity.
Content	This course provides basic knowledge about drugs (pharmacology) which consists of the scope of pharmacology, general principles of drug action, how drugs work on systems and organs (pharmacodynamics), fate of drugs in the body (pharmacokinetics), and drug interactions as a basis for selecting, as well as making drug combinations that will be used clinically.

Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Problem-Based Learning Papers, and Problem-Based Learning Presentations **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Adams, R. H. 1995. Veterinary Pharmacology and Therapeutics. 7th Ed. Iowa State University Press/Ames, Iowa. 2. Brander, G. C. Pugh, D. M. Bywater, R. J. and Jenkins, W. L. 1977. 5th Ed. Bailliere Tindal, London. 3. Katzung, B. G. 1992. Basic and Clinical Pharmacology. 5th Ed. Appleton & Lange Norwalk, Connecticut. 4. Ganiswarna, S. G. Setyabudi, R. Suyatna, F. D. Purwatyastuti. dan Nafrialdi. 1995. Farmakologi dan Terapi. Ed. 4. Bagian Farmakologi Fakultas Kedokteran Universitas Indonesia, Jakarta. 5. Stockley, Ivan H. 1981. Drug interaction. Blackwell Scientific Publication

31. AFF 332 Pharmacology II

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	6th (even) Semester
Person responsible for the module	Drh. Min Rahminiwati, MS, PhD
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments and quizzes from the provided handout, PowerPoint, other references that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 124 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hour x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Midterm and Final Practicum Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 11 weeks = 11 hours/semester Individual Assignments: 1 hour x 14 weeks = 14 hours/semester Quiz preparation: 1 hour x 14 weeks = 14 hours/ semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Pharmacology I.

Module objectives/intended learning outcomes	After completing this course, students can explain the basics of chemotherapy as the basis for clinical use of drugs, drug classes and their applications, and through practical activities, students can administer drugs to experimental animals, identify drug action and explain their pharmacokinetics and pharmacodynamics.
Content	This course explains the dynamics and kinetics as well as the application of pharmacological chemotherapeutic drugs in the veterinary field, such as antimicrobial, antiparasitic, antineoplastic, immunopharmacology, growth-promoting vitamins and minerals. In addition, this lecture also discusses drug interactions that can affect the achievement of drug use, and the importance of using chemotherapeutic drugs wisely and responsibly to prevent the occurrence of resistance.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Midterm Practicum Exam : paper or online based test Final Practicum Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exam, Problem-Based Learning Papers, Problem-Based Learning Presentations, Individual Assignments, and Quizzes **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Adams, R. H. 1995. Veterinary Pharmacology and Therapeutics. 7th Ed. Iowa State University Press/Ames, Iowa. 2. Brander, G. C. Pugh, D. M. Bywater, R. J. and Jenkins, W. L. 1977. 5th Ed. Bailliere Tindal, London. 3. Katzung, B. G. 1992. Basic and Clinical Pharmacology. 5th Ed. Appleton & Lange Norwalk, Connecticut. 4. Ganiswarna, S. G. Setyabudi, R. Suyatna, F. D. Purwatyastuti. dan Nafrialdi. 1995. Farmakologi dan Terapi. Ed. 4. Bagian Farmakologi Fakultas Kedokteran Universitas Indonesia, Jakarta. 5. Stockley, Ivan H. 1981. Drug interaction. Blackwell Scientific Publication.

32. AFF 431 Veterinary Toxicology

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th (odd) Semester
Person responsible for the module	Dr. Drh. Andriyanto, M.Si
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments and quizzes from the provided handout, PowerPoint, other references that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 110 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 1 hour x 14 weeks = 14 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Midterm and Final Practicum Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 11 weeks = 11 hours/semester Individual Assignments: 1 hour x 14 weeks = 14 hours/semester Quiz preparation: 1 hour x 14 weeks = 14 hours/ semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Pharmacology II.

Module objectives/intended learning outcomes	1. Students can explain the basics of veterinary toxicology 2. Students can explain the characteristic, clinical symptoms, diagnosis and control of poisoning by organic compounds in animals and poisoning by minerals and inorganic substances (acids, bases, ammonium compounds, and urea). 3. Students can explain chemicals that can cause carcinogenesis, teratogenesis, and infertility. 4. Students can explain the important toxins present in plants and the mechanisms and causes of photosensitization and cyanogenic plants. 5. Students can explain chemicals added to food along with their diagnosis and treatment. 6. Students can explain heavy metals and radioactive materials that have the potential to cause poisoning, their clinical symptoms, mechanisms of toxicity, diagnoses and treatment options. 7. Students can explain the characteristic, clinical symptoms, diagnosis and management of pesticide poisoning. 8. Students can explain the characteristic, clinical symptoms, diagnosis and management of poisoning due to the application of drugs that have certain specificity towards certain species. 9. Students can explain matters relating to environmental toxicology, the mechanism of poisons, the effects of toxins on environmental health and their prevention. 10. Students can understand general rules regarding practicum, rules and know the veterinary and written practicum exams, as well as assignments (reports). 11. Students can understand the activity of local protective and irritant compounds, testing techniques and toxic effects on the mucosa and skin of experimental animals. 12. Students can understand the application technique of pharmacological compound absorption testing. 13. Students can understand the detoxification function test done in experimental animals through the application of organic compounds toxicants and their measurement techniques through the onset and duration of anaesthetic substances. 14. Students can understand hematotoxic poisoning testing, including the identification of symptoms, treatment and introduction of poisons in treating pesticide poisoning and diagnostic techniques, as well as identification of organic phosphate compounds in vitro. 15. Students can understand the cyanide poisoning test and the administration of antidotes, as well as the examination of its contents in plant samples and animal organs of

	animals suspected of having cyanide poisoning. 16. Students can understand experiments for testing toxic substances that alter red blood cell surface through the mechanism of concentration differences and surface tension. 17. Students can understand drug poisoning testing (strictin) by looking at clinical symptoms and antidotes. 18. Students can understand Thomson and Weil's LD50 test method on frogs and/or mice. 19. Students can understand the toxicant LC50 test method. 20. Students can understand the application of the Reinch test for the identification of heavy metals through the specific chelating colors formed between heavy metal salts and copper plates. 21. Students can understand the application of in vitro tests for chemical and physical antidotes of heavy metals and through these reactions, practicum participants can assess the effectiveness of the antidotes. 22. Students can present the results of the practicum that has been carried out.
Content	This course discusses the basics of toxicology, chemical poisoning, plant poisoning, pesticide poisoning, food poisoning, metalloid poisons and radioactive materials, carcinogenic and teratogenic materials, environmental toxicology, and legislation on toxic substances.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Midterm Practicum Exam : paper or online based test Final Practicum Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exam, Problem-Based Learning Papers, Problem-Based Learning Presentations, Individual Assignments, and Quizzes **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course

Reading list	1. Clarke, M. L. Harvey, D.G. and Humphrys, D. J. 1981. Veterinary Toxicology. 2th Ed. English Language Book Society and Bailliere Tindal. London (4-13) 2. B. Lu, F. C. Toksikologi Dasar. Asas, organ sasaran dan penilaian resiko. UI Press, Jakarta 1995 (1-81) 3. C. Klaassen, C. D. Amdur, M. O. and Doull, J. 1986. Cassarett and Doull's Toxicology. The Basic Science of Poisons. 3th Ed. Macmillan Publising Company. New York. (3,64) 4. D. Brander, Bywater, P. Jenkins. 1991. Veterinary Applied Pharmacology and Therapeutics. 3th Ed. 5. Hodgson, E. 2000.Textbook of modern Toxicology. 2th Ed. International Mc Graw Hill Book Co. Singapore. (1-95; 295-305) 6. Hyde, W. Kiesey, P. Ross, F. Stahr, H. M. 1977. Analitical Toxicology Methods Manual. Iowa State University Press. Iowa. (4-13)

33. AFF 224 Medical Biochemistry

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	3rd (odd) Semester
Person responsible for the module	Dr. Drh. Ronald Tarigan, M.Si
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, problem-based learning group paper and presentation assignments, as well as independent learning through individual assignments from the provided handout, PowerPoint, other references that are relevant and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 70 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hour x 14 weeks = 28 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 4 weeks = 11 hours/semester Individual Assignments: 1 hour x 13 weeks = 13 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Biochemistry.
Module objectives/intended learning outcomes	After completing this course, students can understand and explain the biochemical processes of life that occur in the animal body related to animal health and disease processes.

Content	This course presents the basics of biochemistry, enzymology, endocrinology, carbohydrate, fat and protein metabolism, metabolism integration, body tissue formation, free radicals and antioxidants, as well as drug metabolism and detoxification. Each topic will also include a discussion on the deviation of the body's biochemical status which will result in the occurrence of a disease or disorder. At the end of the course, students can integrate all the topics obtained and can form the basis for veterinary science.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Problem-Based Learning Papers, Problem-Based Learning Presentations, and Individual Assignments. **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	*1.* Engelking LR. 2015. Textbook of Veterinary Physiological Chemistry 3rd Edition, Academic Press *2.* Kenoko et al. Clinical Biochemistry of Domestic Animals 6th Edition, Academic Press

34. IPH 222 Veterinary Bacteriology and Mycology

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	3rd and 4th (odd and even) Semester
Person responsible for the module	Drh. Titiek Sunartatie, MS
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through problem-based learning group assignments, individual assignments, and quizzes. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 111 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class (laboratory sessions): 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exam: 2 hours x 2 sessions = 4 hours total sessions Midterm and Final Practicum Exam: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 7 weeks = 7 hours/semester Individual Assignments: 1 hour x 5 weeks = 5 hours/semester Quiz preparation: 1 hour x 14 weeks = 14 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Biology and General Biochemistry.

Module objectives/intended learning outcomes	1. Students can explain about the life of bacteria and fungi and their role as agents of infectious diseases 2. Students can explain mechanism of action of antibacterial and antifungal ingredients as well as the basic principles of laboratory diagnosis of diseases caused by bacterial and fungal infections 3. Students can explain basic microbiology techniques for laboratory diagnosis of diseases caused by bacterial and fungal infections
Content	This course provides an understanding of the basics on the life of bacteria and fungi as well as their role as agents of infectious diseases. The content in this course includes the history, characteristics, classification, growth and reproduction, metabolism, genetics, virulence factors of bacteria and fungi; mechanism of action of antibacterial and antifungal ingredients; and the basic principles of laboratory diagnostics. Practicum is provided in the laboratory to learn basic microbiological techniques which include microscopy, staining, media preparation, sterilization, culture techniques and basic techniques for identifying bacteria and fungi.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Midterm Practicum Exam : paper or online based test Final Practicum Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exam, Final Exam, Midterm Practicum Exam, Final Practicum Exam, Problem-Based Learning Papers, Problem-Based Learning Presentations, Individual Assignment, and Quizzes. **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course

Reading list	1. Carter GR, JR Cole. 1990. Diagnostic Procedures in Veterinary Bacteriology and Mycology. Academic Press, Inc. Sandiego, CA. 2. Carter GR, MM Chengapa and AW Roberts. 1995. Essentials of Veterinary Microbiology. Williams & Wilkins, Baltimore, PA. 3. Kwon-Chung KJ, JE Bennet. 1992. Medical Mycology. Lea & Febiger, Philadelphia. 4. Salyer AA, DD Whitt. 1994. Bacterial Pathogenesis, A Molecular Approach, ASM Press, Washington, DC. 5. Tortora GJ, BR Funke. 1998. Microbiology an Introduction. Benjamin Cummings Publishing Company, Inc. Menlo Park, CA. 6. Quinn PJ, ME Carter, WJ Donnely and FC Leonard. 2001. Veterinary Microbiology and Microbial Diseases. Oxford, UK. 7. Cappucino JG, N Sherman. 1987. Microbiology, a Laboratory Mannual. The Benjamin/Cummings Publishing Company, Inc, Menlo Park, CA 8. Lay BW. 1994. Analisis Mikroba di Laboratorium. Rajawali Press, Jakarta 9. Carter GR, JR Cole. 1990. Diagnostic Procedures in Veterinary Bacteriology and Mycology. Academic Press, Inc. San Diego, CA 10. Al-Doory Y. 1980. Laboratory Medical Mycology. Lea and Febiger, Philadelphia.

35. IPH 223 Veterinary Virology

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	3rd and 4th (odd and even) Semester
Person responsible for the module	Dr. drh. Sri Murtini, M.Si
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through problem-based learning group assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 88 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 1 hours x 14 weeks = 14 hours/semester Practicum Class (laboratory sessions): 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Midterm and Final Practicum Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 3 hours/semester Quiz preparation: 1 hour x 14 weeks = 14 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Biology and General Biochemistry.
Module objectives/intended learning outcomes	Students can explain general knowledge about viruses and their role as agents of infectious diseases and the factors that influence the onset of disease, mechanism of action of antiviral agent, as well as the principles of laboratory diagnosis due to viral infection.

Content	This course provides basic knowledge about viruses in their physical, chemical and biological characteristics, their mechanism of reproduction (virus propagation) and their role as the cause of animal diseases and their role in life in general. The course is enriched with laboratory practicums that study virus isolation and identification techniques including culturing techniques and serological identification.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Midterm Practicum Exam : paper or online based test Final Practicum Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Midterm Practicum Exam, Final Practicum Exam, Problem-Based Learning Papers and Presentations, and Quizzes. **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	Murphy FA, Gibbs, EPJ, Horzinek MC, Studdert MJ. 1999. Veterinary Virology. 3rd edition. San Diego (US): Academic Press.

36. IPH 231 Veterinary Parasitology: Ectoparasite

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	3rd and 4th (odd and even) Semester
Person responsible for the module	Prof. Dr. Drh. Upik Kesumawati Hadi, MS
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through group assignments and discussions outside of class. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 95 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 1 hours x 14 weeks = 14 hours/semester Practicum Class (laboratory sessions): 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Midterm and Final Practicum Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 10 weeks = 10 hours/semester Problem-Based Learning Assignments: 1 hour x 14 weeks = 14 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Biology, Veterinary Anatomy I.
Module objectives/intended learning outcomes	Students can explain the concepts of parasites and parasitism, the factors that influence them and identify various types of ectoparasites that are important for animal/community health, ranging from classification, morphology, habitat and life cycle, important behaviors, as well as the philosophy and ways of controlling them.

Content	This course discusses the concepts of parasites and parasitism, the factors that influence them, and various types of ectoparasites that are important for animal/community health, ranging from classification, morphology, habitat and life cycle, the behavior of importance, as well as philosophy and ways of controlling them. Collection, processing, and identification techniques are also discussed at the end of the lecture.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Practicum Exams : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Group Problem-Based Learning Papers and Presentations **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Hadi, U.K & S. Soviana. 2017. EKTOPARASIT: Pengenalan, Identifikasi dan Pengendalian. IPB Press. Bogor 2. Hadi, U.K., S. Soviana, D.J. Gunandini & Supriyono. 2013. ATLAS VETERINER. IPB Press. Bogor 3. Hadi, U.K., D.J. Gunandini, S. Soviana, & S.H. Sigit. 2017. Panduan Identifikasi Ektoparasit: Bidang Medis dan Veteriner. Edisi 2. IPB Press. Bogor 4. Harwood, R.F. & M.T. James. 1979. Entomology in Human & Animal Health. 7th. Ed. Mc.Millan Publ. Co. 5. Sigit, S.H, Hadi U.K. 2006. Hama Permukiman Indonesia. Pengenalan, Biologi dan Pengendalian. Unit Kajian Pengendalian Hama Permukiman. Fakultas Kedokteran Hewan IPB. Bogor 6. Soulsby, EJL. 1989. Helminths, Arthropods, and Protozoa of Domesticated Animals. Bailliere Tindall. London

37. IPH 331 Veterinary Parasitology: Endoparasite

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	5th and 6th (odd and even) Semesters
Person responsible for the module	Dr. drh. Elok Budi Retnani, MS
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 85 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 1 hours x 14 weeks = 14 hours/semester Practicum Class (laboratory sessions): 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Midterm and Final Practicum Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Problem-Based Learning Group Assignments: 1 hour x 14 weeks = 14 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in General Pathology or taken during the same semester together.
Module objectives/intended learning outcomes	Students can explain the morphological, biological, pathogenesis, diagnosis, and control characteristics of endoparasites in domestic, wild and aquatic animals that are important from an economic and/or public health perspective.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Midterm and Final Practicum Exams : paper or online based test Problem-Based Learning Papers and Assignments
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Group Problem-Based Learning Paper and Presentations **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Kusumamihardja, S. 1992. Parasit dan Parasitosis pada Hewan Ternak dan Hewan Piaraan di Indonesia. PAU Bioteknologi IPB. Bogor. 2. Soulsby, EJL. 1986. Helminths, Arthropods and Protozoa of Domesticated Animals. Bailliere Tindall. London. 3. Nobel ER, Nobel GA, Schad GA, MacInnes AJ. 1989. Parasitology. The biology of animal parasites. Lea & Febiger Philadelphia London. 4. Bowman DD, Lynn RC, Eberhard ML, Alcaraz A. 2003. Georgis' Parasitology for Veterinarians. (Eds 8th). Elsevier (USA). 5. Levine, N.D. 1985. Protozoologi Veteriner. Gadjah Mada University Press. 6. Ashadi, G. Dan Partosoedjono. 1992. Penuntun Laboratorium Parasitologi I, PAU-IPB. 7. Adam, K.M.G.J. Paul and V.Zaman. 1971 Medical and Veterinary, Protozoology, Edinburg

38. IPH 322 Medical Immunology

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	5th and 4th (odd and even) Semester
Person responsible for the module	Dr. Drh. Ni Luh Putu Ika Mayasari
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion session, and independent learning through quizzes. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Quiz preparation: 1 hour x 14 weeks = 14 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Veterinary Bacteriology and Mycology and Veterinary Virology or taken together with this course during the same semester.
Module objectives/intended learning outcomes	1. Students can explain the immune system/defense mechanism and its disorders 2. Students can explain about biological materials such as vaccines and sera 3. Students can read and explain the results of serological tests
Content	This course covers general knowledge of immune reactions to foreign bodies (microorganisms and non-microorganisms), infection mechanisms, antigen-antibody reactions, hypersensitivity reactions, immune system disorders, serological tests, and vaccine manufacture and use of vaccines.

Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, and Quizzes. **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Tizard, IR. 2013. Veterinary Immunology. 9th Edition. Elsevier Saunders 2. DeFranco AL, Locksley RM, Robertson M. 2007. Immunity: The Immune Response in Infectious and Inflammatory Disease. New Science Press Ltd

39. IPH 311 Veterinary Public Health Science

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	5th (odd) Semester
Person responsible for the module	Dr. Drh. Hadri Latif, MSi
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, and independent learning through group assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 45 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 1 hours x 14 weeks = 14 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 13 weeks = 13 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	1 SCH x 1.5 = 1.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in iph 222, iph 223
Module objectives/intended learning outcomes	1. Students can explain the general concept of public health and its relationship with veterinary medicine 2. Students can identify health problems, pollution, biosecurity that related to public health 3. Students can describe the incidence of antimicrobial resistance, the role of the guarantee system food safety in the supply and trade of food of animal origin, and approaches one health/eco health in public health 4. Students can compare various study methods used in public health 5. Students have an honest, cooperative, and communicative attitude.

Content	This course discusses the meaning of health and public health, the role of veterinary medicine in public health, the factors and causes of disease that affect public health, as well as efforts to improve health. This course also covers pollution of livestock waste and animal product business units, biosecurity, antimicrobial resistance, food safety assurance system of animal origin as well as introducing the concept of One Health and ecohealth for public health. In addition, the study methodology and biostatistics on public health are also discussed.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, and Group Assignments **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Dainur. 1992. Materi-materi Pokok Ilmu Kesehatan Masyarakat. Penerbit Widya Medika. Jakarta 2. IS Arvnitoyannis. 2009. HACCP and ISO 22000 Application to Food of Animal Origin. Ames, Iowa (US): Wiley-Blackwell 3. J Zinsstag, E Schelling, D Waltner-Toews, M Whittaker, M Tanner (Editors). 2015. One Health: The Theory and Practice of Inegrated Health Approach. Wallingford, Oxfordshire (UK): CABI 4. Notoadmojo S. 1997. Ilmu Kesehatan Masyarakat. Penerbit Rineka Cipta. Jakarta 5. Smillie WG. 1995. Public Helth its Promise for The Future. The Macmillan Company. New York. USA 6. The Macmillan Company. 1960. An Introduction to Public Health 3rd ed. Publisher Brett-Macmillan. USA 7. Waltner-Toews D. 2011. EcoHealth: A Primer. Veterinarians without Borders. Kanada 8. Humaida R. 2014. Strategy to handle resistance of antibiotics. J Major

40. IPH 411 Hygiene of Food of Animal Origin

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	6th (even) Semester
Person responsible for the module	Dr.med.vet. Drh. Denny Widaya Lukman, MSi
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, and independent learning through individual assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 103 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class (laboratory sessions): 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Midterm and Final Practicum Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Individual Practicum Reports : 1 hour x 14 weeks = 14 hours/semester Individual Assignment: 1 hour x 4 weeks = 4 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in iph 311, iph 222, iph 223

Module objectives/intended learning outcomes	1. Students can explain the quality and safety of food of animal origin, especially milk, meat, eggs, honey, swallow's nest, and fish and their impact on consumer health, including good hygiene practices for food of animal origin. 2. Students can explain the application of animal welfare principles in slaughterhouses for ruminants, pigs, and poultry. 3. Students can identify deviations in the quality and safety of food of animal origin. 4. Students can explain and communicate to the public and/or stakeholders about ensuring the safety, health, integrity, and halalness of food products of animal origin, especially milk, meat, eggs, honey, swallow nests, and fish. 5. Students have an honest, cooperative, and communicative attitude.
Content	The content discusses hygiene of food of animal origin, especially milk, meat, eggs, honey, swallow's nest, and fish, including composition, characteristics, good production and handling methods, application of animal welfare, important microorganisms in food of animal origin, and damage or spoilage. Also discussed about the health problems of consumers due to consuming milk and its processed products as well as several ways of processing milk, as well as subclinical mastitis from the aspect of veterinary public health.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Midterm and Final Practicum Exams : paper or online based test Individual Practicum Report
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, and Assignments **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course

Reading list	1. Barbut S. 2016. The Science of Poultry and Meat Processing. Guelph (CA): University of Guelph. 2. Divisi Kesmavet dan Epidemiologi. 2020. Bahan Kuliah Higiene Pangan Asal Hewan. Bogor (ID): Divisi Kesmavet dan Epidemiologi FKH IPB. 3. Gracey JF, Collins DS, Huey RJ. 1999. Meat Hygiene. London (UK): WB Saunders. 4. Mine Y, Ed. 2008. Egg Bioscience and Biotechnology. New Jersey (US) John Wiley 5. Wastra P, Wouters JTM, Geurts TJ. 2006 Dairy Science and Technology. Boca Raton, Florida (US):CRC Pr.

41. IPH 324 Bacterial and Mycotic Diseases

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th and 6th (odd and even) Semester
Person responsible for the module	Drh. Usamah Afiff, MSc
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through problem-based learning group assignments, practicum group assignments and quizzes. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class (Laboratory Sessions): 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Midterm and Final Practicum Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Problem-Based Learning Group Assignment: 1 hour x 14 weeks = 14 hours/semester Practicum Group Assignment: 1 hour x 14 weeks = 14 hours/semester Quiz preparation: 1 hour x 14 weeks = 14 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in iph 222, iph 322, krp 341

Module objectives/intended learning outcomes	1. Students can explain the role of infectious diseases, develop techniques for diagnosis, prevention, and eradication of infectious diseases of bacterial origin 2. Students can explain how to diagnose, and identify the causative agents of infectious diseases caused by Bacillus and Clostridium 3. Students can explain, diagnose, and identify the causative agent of infectious diseases caused by Brucella 4. Students can explain, diagnose, and identify the causative agents of infectious diseases caused by Pasteurellaceae 5. Students can explain, diagnose, and identify the causative agents of infectious diseases caused by Mycobacterium and Mycoplasma 6. Students can explain, diagnose, and identify the causative agents of infectious diseases caused by Salmonella and Escherichia 7. Students can explain, diagnose, and identify the causative agents of infectious diseases caused by Streptococcus and Staphylococcus 8. Students can explain the definition of mykal disease; interaction of agent, host, and environment; disease grouping based on the affected tissue; antifungal mechanism of action. 9. Students can explain how to diagnose and identify disease-causing agents, etiology, epidemiology, pathogenesis, disease symptoms, disease prevention, and eradication of diseases caused by Microsporum, Trichophyton, and Epidermophyton. 10. Students can explain how to diagnose and identify disease-causing agents, etiology, epidemiology, pathogenesis, disease symptoms, disease prevention, and eradication of diseases caused by Aspergillus and Mucorales. 11. Students can explain how to diagnose and identify disease-causing agents, etiology, epidemiology, pathogenesis, disease symptoms, disease prevention, and eradication of diseases caused by yeasts: Candida, Malassezia, and Cryptococcus. 12. Students can explain how to diagnose and identify disease-causing agents, etiology, epidemiology, pathogenesis, disease symptoms, disease prevention, and eradication of diseases caused by dimorphic fungi: Histoplasma, Blastomyces, Coccidioides, and Sporothrix. 13. Students can explain how to diagnose and identify disease-causing agents, etiology, epidemiology, pathogenesis, disease symptoms, disease prevention, and eradication of diseases caused by mycotoxins (aflatoxin and ochratoxin). 14. Students can explain how to diagnose and identify disease-

	causing agents, etiology, epidemiology, pathogenesis, disease symptoms, disease prevention, and eradication of diseases caused by other mycotoxins (Zearalenone, Fumonisin, T2 Toxin, Patulin, and Citrinin). 15. After laboratory sessions, students can explain general microbiology techniques, interpretation of results to diagnose diseases caused by bacteria and fungi in the laboratory
Content	This course provides an understanding of infectious diseases of bacterial and fungal origin which are socio-economically and politically important (strategic diseases) in Indonesia and for international animal health. In this course, the topics covered include: etiology, disease symptoms, pathogenesis, diagnosis, epidemiology, prevention and eradication of infectious diseases. This course also provides information on ways to isolate and identify bacteria and fungi that cause disease to confirm the diagnosis during laboratory sessions.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Midterm Practicum Exam : paper or online based test Final Practicum Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Problem-Based Learning Papers, Problem-Based Learning Presentations, Group Practicum Assignments, and Quizzes. **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course

Reading list	1. Carter GR, Cole JR. 1990. Diagnostic Procedures in Veterinary Bacteriology and Mycology. San Diego (US): Academic Press, Inc. 2. Carter GR, Chengapa MM, Roberts AW. 1995. Essentials of Veterinary Microbiology. Baltimore (US): Williams & Wilkins. 3. Chute HL. 1991. Fungal infection. Calnek BW, editor. Di dalam: Disease of Poultry. Ames (US): Iowa State University Pr. Ames. Hlm. 326-329. 4. Hoerr FJ. 1991. Mycotoxicosis. Calnek BW, editor. Disease of Poultry. Ames (US): Iowa State University Pr. Hlm. 884-915. 5. Jelinek CF, Pohland AE, Wood GG. 1989. Worldwide Occurrence of Mycotoxicosis in food and feed. Journal of the Association of Official Analytical Chemists (USA) 72(2): 223-230. 6. Kwon-Chung KJ, Bennet JE. 1992. Medical Mycology. Philadelphia (US): Lea and Febiger. 7. Mim CA, Playfair JHL, Roitt IM, Wakelin D, Willionis R. 1993. Medical Microbiology 8. Salyer AA, Whitt DD. 1994. Bacterial Pathogenesis, A Molecular Approach. Washington D.C. (US): Asm Pr. 9. Tortora GJ, Funke BR. 1998. Microbiology, an Introduction. San Francisco (US): Benjamin/Cummings Publishing Company, Inc. 10. Quinn PJ, Carter ME, Donnelly WJ, Leonard FC. 2001. Veterinary Microbiology and Microbial Diseases. Oxford (UK): Blackwell Science.

42. IPH 325 Viral Diseases

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th and 6th (odd and even) Semester
Person responsible for the module	Drh. Surachmi Setiyaningsih, Ph.D
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 104 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class (laboratory sessions): 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 14 weeks = 14 hours/semester Individual Assignment: 1 hour x 9 weeks = 9 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in Veterinary Virology, Medical Immunology, and Systemic Pathology.
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course provides an understanding of diseases caused by viruses which are socio-economically and politically important both in Indonesia and in international animal health world. The discussion of this course covers aetiology, epidemiology, transmission, pathogenesis, clinicopathology, diagnosis, as well as control and prevention of viral diseases. Practicum is provided in the form of laboratory practice (PCR diagnostic technique), group discussions and presentations on various detection and diagnosis techniques for various animals due to viral infections.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam,Group Problem-Based Learning Papers and Presentations, as well as Individual Assignments **Psychomotor:** Practicums (laboratory sessions) **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	a. MacLachlan NJ and Dubovi EJ (Editors), 2017. Fenner's Veterinary Virology, 5th edition, Elsevier. b. Swayne DE, et al. (Editors), 2020. Diseases of Poultry. 14th edition. John Wiley & Sons, Inc. c. OIE. Manual of diagnostic tests and vaccines for terrestrial animals. https://www.oie.int/en/what-we-do/standrards/codes-and-manuals/terrestrial-manual-online-access/. Accessed 29 April 2021. d. OIE. Manual of diagnostic tests and vaccines for aquatic animals. https://www.oie.int/en/what-we-do/standrards/codes-and-manuals/aquatic-manual-online-access/. Accessed 29 April 2021. e. MSD Veterinary Manual. https://www.msdvetmanual.com/. Accessed 18 April 2021. f. US Department of Health and Human Services, 2020. Biosafety in Microbiological and Biomedical Laboratories. 6th edition. https://www.cdc.gov/labs/pdf/SF__19_308133-A_BMBL6_00-BOOK-WEB-final-3.pdf. Accessed 18 April 2021. g. Christian RA, et al. (Editors), 2012. Nonhuman Primates in Biomedical Research, Vol.2, 2 nd edition. Diseases. Academic Press, USA.

43. IPH 412 Zoonoses

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th (odd) Semester
Person responsible for the module	Dr. drh. Trioso Purnawarman, MSi
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, presentation, and independent learning through problem-based learning group assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 53 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Problem-Based Learning Group Assignment: 1 hour x 7 weeks = 7 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in iph 331, iph 324, iph 325 atua bersamaan
Module objectives/intended learning outcomes	After completing this course, students can explain about several zoonotic diseases caused by bacteria, viruses, fungi, protozoa, helminths, rickettsiae, and prions, their modes of transimission, as well as preventive and control measures.

Content	This course discusses the characteristic and traits of causes (etiology) of zoonotic diseases, epidemiology, pathogenesis, their modes of transmission, prevention and control; current trends and problems of disease caused by bacteria, viruses, fungi, protozoa, helminths, rickettsiae, and prions that can be transmitted from animals to humans. The discussion focuses on diseases found in Indonesia, which threaten public health and are economically detrimental.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Problem-Based Learning Papers, and Problem-Based Learning Presentations **Psychomotor:** - **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Acha PN, Szyfres B. 2003. Zoonoses and Communicable Diseases Common to Man and Animals. Third Edition (3 volume). Washington: Pan American Health Organization. 2. Gandahusada SH, Ilahude D, Pribadi W. 1996. Parasitologi Kedokteran. Jakarta (ID): Balai Penerbit FKUI 3. Htpp://www.cfsph.iastate.edu/diseaseinfo. 4. Preston R. 1996. The Hot Zone (Terjemahan Wododo ATK). Jakarta (ID): PT. Gramedia Pustaka Utama. 5. Schurrenberger PR, Hubbert WT. 1991. Ikhtisar Zoonosis (terjemahan M P E Mulyono). Bandung (ID): Penerbit ITB.. 6. Sitepoe M. 2000. Sapi Gila. Bovine Spongiform Encellopathy = BSE. Keterkaitannya dengan Berbagai Aspek. Jakarta (ID): PT. Gramedia Widiasarana. 7. Soeharsono. 2002. Zoonosis. Penyakit Menular dari Hewan ke Manusia. Jakarta (ID): Kanisius

44. IPH 413 Veterinary Epidemiology and Economy

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th and 8th (odd and even) Semester
Person responsible for the module	Drh. Abdul Zahid, MSi
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in stk211, iph 323, iph 421, iph 331

Module objectives/intended learning outcomes	1. Students can explain the meaning, scope, objectives and role of epidemiology in the field of veterinary medicine 2. Students can explain basic concepts and approaches used in epidemiology 3. Students can use epidemiological parameters to measure disease expression in the population 4. Students can perform epidemiological data management and analysis 5. Students can apply sampling techniques in epidemiological studies 6. Students can apply the procedure for diagnostic testing, the purpose and use of the test in determining disease status 7. Students can apply the objectives and types of observational studies to measure the level of disease and investigate the causes of disease in the population 8. Students can apply the pattern of causality between risk factors and disease incidence 9. Students can apply the monitoring and surveillance system according to the diseases control program 10. Students can carry out simulated investigations of infectious animal disease outbreaks 11. Students can apply the concept of animal disease control and eradication 12. Students can apply the basic concepts of veterinary economics and their calculation techniques 13. Students can calculate the economic impact of animal diseases and the benefits of their control 14. Students can explain the concepts and components of risk analysis in the context of importing animals and animal products
Content	This course discusses the concept of veterinary epidemiology which includes the meaning, objectives and interests of epidemiology in the field of veterinary medicine; the concept and ecology of disease in populations; disease measurement techniques and disease data management in the population; observational and molecular studies in animal disease investigations; diagnostic test technique; survey techniques, monitoring and surveillance of animal diseases; outbreak investigations; analysis of the risk of imports of animals and animal products, and; planning and economic analysis of animal disease control programs.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations

Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Dohoo I, Martin W. dan Stryhn H. 2003. Veterinary Epidemiologic Research. Canada: AVC Inc. 2. Martin SW, Meek AH, Willeberg P. 1988. Veterinary Epidemiology. USA: Iowa State University Press 3. Putt SNH, Shaw APM, Woods AJ, Tyler L, James AD. 1988. Veterinary Epidemiology and Economic in Africa. ILCA Manual No.3. VEERU. University of Reading, England 4. Salman MD. 2003. Animal Disease Surveillance and Survey Systems. Iowa: Iowa State Press. 5. Thrusfield M. 2005. Veterinary Epidemiology 3th ed. Berlin: Blackwell Science.

45. KRP 311 Veterinary Clinical Diagnostics

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	5th (odd) Semester
Person responsible for the module	Drh. Retno Wulansari, PhD
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in aff 311, aff 336, aff 224
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Kelly, W.R. 1984. Veterinary Clinical Diagnosis , 3rd.Ed. Bailliere Tindall London 2. Radostits, O.M., Blood, D.C., Gay, C.C. 1994. Veterinary Medicine. Bailliere tindall London

46. KRP 321 Veterinary General Surgery

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	5th and 6th (odd and even) Semester
Person responsible for the module	Prof. Drh. Deni Noviana, PhD, DAiCVIM prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in aff 311
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. McCurnin DM, Joanna MB. 2002. *Clinical Textbook for Veterinary Technicians* . 6th ed . *Elsevier Saber Foundation.* 2. Leahy JR, Pat B. 2002. *Animal Restraint.* Philadelphia. 3. Busch SJ. 2006. *Small Animal Surgical Nursing. Skills and Concepts. Elsevier Mosby. Inc* 4. Barbara L. Christe. 2009. *Introduction to Biomedical Instrumentation (The Technology of Patient Care).* Indiana University Purdue University Indianapolis: Cambridge University Press. 5. Katherine *et al* . 2007. *Animal Physiotherapy.* 6. Hall LW. 1977. *Wright's Veterinary Anaesthesia and Analgesia.* 7th ed . *Bailife Tindal.* 7. Knueven D. 2008. *The Holistic Health Guide.* 8. Fossum TW. 2013. *Small Animal Surgery* . 4th ed . Missouri (US): Elsevier 9. Novakovski TD, de Vries M, Seymour C. 2016. *BSAVA Manual of Canine and Feline* 10. *Anesthesia and Analgesia* . 3rd ed . Quedgeley (UK): BSAVA

47. KRP 341 General Pathology

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	5th (odd) Semester
Person responsible for the module	Prof. Drh. Bambang Pontjo Priosoeryanto, MS, Ph.D, APVet, DACCM prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in aff 226, aff 215, aff 214, iph 322 atau bersamaan
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Cheville N. 2006. Introduction to Veterinary Pathology. 3r ed. Willey Blackwell 2. Jubb KVF, PC Kennedy and N Palmer. 1992. Pathology of Domestic Animals 4th Ed. Academic Press, Inc. 3. Cotran, RS. V. Kumar dan SL. Robin, 1994. Pathologic Basis of Disease 5th Ed. WB Saunders Company, USA 4. Carlton WW and MD McGavin. 1995. Thomson's Special Veterinary Pathology. 2nd Ed. Mosby Year Book. 5. Damjanov I. 1996. istopathology. A color atlas and text book. Williams & Wilkins 6. Jones TC, RD Hunt and NW King. 1997. Veterinary Pathology 6th Ed. Williams & Wilkins. **7.** McGavin MD, James F. Zachary. 2006. Pathologic Basis of Veterinary Disease. 4th Ed .Mosby

48. KRP 331 Reproductive Science and Technology

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	5th (odd) Semester
Person responsible for the module	Dr. drh. Ligaya ITA Tumbelaka SpMP, MSc prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in aff 213, aff 226
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Senger, P.L. 2012. Pathways to Pregnancy and Parturition. 3rd Edition. Current Conceptions, Inc. Redmon, OR 97756 2. Hafez,E.S.E. 2000. Reproduction in Farm Animals. 6th Ed. Lea & Febiger, Philadelphia. 3. Schatten H , Constantinescu GM. 2007. Comparative Reproductive Biology. Blackwell Publishing Professional , Iowa , USA 4. McDonald, L.E. 1989. Veterinary Endocrinology and Reproduction. 4thEd. Lea & Febiger, Philadelphia. 5. Toelihere MR. 1979. Fisiologi reproduksi pada ternak. Angkasa. Bandung

49. KRP 342 Systemic Pathology I

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	6th (even) Semester
Person responsible for the module	Dr. Drh. Eva Harlina, MSi, APVet No prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in krp341
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	**1.** Cheville N. 2006. Introduction to Veterinary Pathology. 3rd ed. Willey Blackwell 2. Jubb KVF, PC Kennedy and N Palmer. 1992. Pathology of Domestic Animals 4th Ed. Academic Press, Inc. 3. Cotran, RS. V. Kumar and SL. Robin, 1994. Pathologic Basis of Disease 5th Ed. WB Saunders Company, USA 4. Carlton WW and MD Mc Gavin. 1995. Thomson's Special Veterinary Pathology. 2nd Ed. Mosby Year Book. 5. Damjanov I. 1996. Histopathology. A color atlas and text book. Williams & Wilkins 6. Jones TC, RD Hunt and NW King. 1997. Veterinary Pathology 6th Ed. Williams & Wilkins. 7. Mc Gavin MD, James F. Zachary. 2006. Pathologic Basis of Veterinary Disease. 4th Ed Mosby.

50. KRP 312 Internal Medicine I

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	6th (even) Semester
Person responsible for the module	Drh. Agus Wijaya, PhD No prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in krp311
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	Text Book (Radostit dan Ettinger) serta E Jurnal 1). Blood DC, Radostits OM, Henderson JA. 2000. Veterinary Medicine. 8th ed. 2). Ettinger SJ, Feldman EC. 1983. Textbook of Veterinary Internal Medicine. 4th Ed. by W.B. Saunders Comp.

51. KRP 323 Veterinary Special Surgery I

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th and 6th (odd and even) Semester
Person responsible for the module	Dr. Drh. Gunanti, MS prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in krp321
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. McCurnin DM, Joanna MB. 2002. *Clinical Textbook for Veterinary Technicians* . 6th ed . *Elsevier Saber Foundation.* 2. Leahy JR, Pat B. 2002. *Animal Restraint.* Philadelphia. 3. Busch SJ. 2006. *Small Animal Surgical Nursing. Skills and Concepts. Elsevier Mosby. Inc* 4. Barbara L. Christe. 2009. *Introduction to Biomedical Instrumentation (The Technology of Patient Care).* Indiana University Purdue University Indianapolis: Cambridge University Press. 5. Katherine *et al* . 2007. *Animal Physiotherapy.* 6. Hall LW. 1977. *Wright's Veterinary Anaesthesia and Analgesia.* 7th ed . *Bailife Tindal.* 7. Knueven D. 2008. *The Holistic Health Guide.* 8. Fossum TW. 2013. *Small Animal Surgery* . 4th ed . Missouri (US): Elsevier **9.** Novakovski TD, de Vries M, Seymour C. 2016. *BSAVA Manual of Canine and Feline*

52. KRP 332 Obstetrics and Gynaecology

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	6th (even) Semester
Person responsible for the module	prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x weeks = hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in krp 331, krp 343
Module objectives/intended learning outcomes	
Content	
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations

Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Bearden, H. J., & Fuquay, J. W. (1984). Applied animal reproduction. Reston Publishing Company, Inc.. 2. Cupps, P. T. (Ed.). (1991). Reproduction in domestic animals. Elsevier. 3. Hafez, E. S. E., & Hafez, B. (Eds.). (2013). Reproduction in farm animals. John Wiley & Sons. 4. Noakes, D. E., Parkinson, T. J., & England, G. C. (2018). Arthur's Veterinary Reproduction and Obstetrics-E-Book. Elsevier Health Sciences. 5. Peters, A. R., & Ball, P. J. H. (1987). Reproduction in cattle. Butterworths. **6.** Pineda, M. H., & Dooley, M. P. (2003). McDonald's veterinary endocrinology and reproduction (No. Ed. 5). Iowa state press.

53. KRP 441 Systemic Pathology II

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th (odd) Semester
Person responsible for the module	Drh. Dewi Ratih Agungpriyono, PhD, APVet prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	3 SCH x 1.5 = 4.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in krp342
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Bearden, H. J., & Fuquay, J. W. (1984). Applied animal reproduction. Reston Publishing Company, Inc.. 2. Cupps, P. T. (Ed.). (1991). Reproduction in domestic animals. Elsevier. 3. Hafez, E. S. E., & Hafez, B. (Eds.). (2013). Reproduction in farm animals. John Wiley & Sons. 4. Noakes, D. E., Parkinson, T. J., & England, G. C. (2018). Arthur's Veterinary Reproduction and Obstetrics-E-Book. Elsevier Health Sciences. 5. Peters, A. R., & Ball, P. J. H. (1987). Reproduction in cattle. Butterworths. **6.** Pineda, M. H., & Dooley, M. P. (2003). McDonald's veterinary endocrinology and reproduction (No. Ed. 5). Iowa state press.

54. KRP 411 Internal Medicine II

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th (odd) Semester
Person responsible for the module	No prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in krp312
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Blood DC, Radostits OM, Henderson JA. 2000. Veterinary Medicine. 8th ed. 2. Davies C, Shell L. 2002. Common Small Animal Diagnoses. An Algorithmic Approach. Philadelphia: WB Saunders Company. Hlm 6-9, 72-75, 92-93, 130-133, 138-141, 194-199. 3. Ettinger SJ, Feldman EC. 1983. Textbook of Veterinary Internal Medicine. 4th Ed. by W.B. Saunders Comp. 4. Lavach. 1990. Large Animal Ophthalmology. Vol 1. The Mosby Comp. 5. Morgan RV. 2008. Handbook of Small Animal Practice. Ed ke-5. Vol 2.4. Blowey RWAD, Weaver, 1991. A Colour Atlas of Diseases & Disorders of Cattle. Wolfe Publishing Ltd. 6. Price SA dan Wilson LMC. 2006. Pathophysiology. The Concept of Clinical Disease Processes. Ed ke-6. Jakarta: Penerbit Buku Kedokteran EGC. 7. Stockham SL, Scott MA. 2002. Fundamentals of Veterinary Clinical Pathology. State Avenue, Ames, Iowa: A Blackwell Publishing Company. 8. Susan, E.A. 2000. The Merck Veterinary Manual. Published by Merck & Co. Corp. White House Station N.J. USA

55. KRP 421 Veterinary Special Surgery II

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th and 6th (odd and even) Semester
Person responsible for the module	Drh. R. Harry Soehartono, MAppSc., Ph.D prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in krp321
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Bright RM, *et al.* 2008. *Handbook of Small Animal Practice* 5th ed. Missouri (US): Saunders Elsevier. 2. Dunn JK. 2000. *Text Book of Animal Medicine*. China (CHN): Saunders. 3. Fossum TW, Hedlund CS, Hulse DA, Johnson AL, Seim III HB, Willard MD, Carroll GL. 2002. *Small Animal Surgery*. Ed 2nd. Missouri (US): Mosby. 4. Foster ME, Morris-Stiff G. 2001. Teknik Bedah Umum. Jakarta (ID): Farmedia. 5. Harari J. 2004. *Small Animal Surgery Secrets*. 2nd ed. Pennsylvania (US): Elsevier. 6. Hedlund CS, Donald AH, Ann LJ, Howard BS, Michael DW, Gwendolyn LC. 2002. 2nd ed. *Small Animal Surgery*. Mosby of Elsevier. *7.* Hoad J. 2006. *Minor Veterinary Surgery. A Handbook for Veterinary Nurses.* China (CHN): *Butterworth Heinemann Elsevier.* 8. Johnson Al, Dunning D. 2005. *Atlas of Orthopedic Surgical Procedures of The Dog and Cat.* Missouri (US): *Saunders Elsevier.* *9.* Mann FA, Constantinescu GM, Yoon HY. 2011. *Fundamentals of Small Animal Surgery.* New Delhi (): *Blackwell Pb.* 10. Piermattei D, Flo G, DeCamp C. 2006. Brinker, Piermattei, and Flo's *Handbook of Small Animal Orthopedics and Fracture.* 4th ed. Missouri (US): Saunders Elsevier. ***11.*** Tobias, KM. 2010. *Manual of Small Animal Soft Tissue Surgery*. 1st ed. Iowa (US): *Blackwell Pb.*

RP 322 Veterinary Radiology

Module designation	**Bachelor Veterinary Science Program**
Semester(s) in which the module is taught	7th and 6th (odd and even) Semester
Person responsible for the module	Prof. drh. Deni Noviana, PhD, DAiCVIM prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in krp321
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Pennick and d'Anjou. 2015. *Atlas of Small Animal Ultrasonography.* Iowa (US): John Wiley & Sons, Inc. 2. Thrall. 2002. *Textbook of Veterinary Radiology.* Philadelphia (US): Saunders Elsevier. 3. Kealy *et al.* 2011. *Diagnostic Radiology and Ultrasonography of the Dog and Cat*. Missouri (US): Saunders Elsevier. 4. Mannion P. 2006. *Diagnostic Ultrasound in Small Animal Practice*. Danvers (US): Blackwell Publishing Oxford. 5. Noviana D. 2017. *Atlas of Normal Radiography in Dogs and Cats*. Bogor (ID): IPB Press. 6. Noviana D. 2018. *Diagnostic Ultrasound in Small Animals*. Bogor (ID): IPB Press. 7. Noviana D. 2014. *Digital Imaging of Dental Radiography of Cats and Dogs*. Bogor (ID): IPB Press.

56. KRP 412 Clinical Pathology

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th and 6th (odd and even) Semester
Person responsible for the module	drh. Arief Purwo Mihardi, M.Si prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in krp311, aff224, krp342
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Stockham SL. & MA Scott. 2008. Fundamentals of Veterinary Clinical Pathology 2. Kaneko JJ. 1998. Clinical Biochemistry of Domestic Animals 3. Coles E.H. 1986 Veterinary Clinical Pathology 4. Jain NC. 1993. Essentials of Veterinary Hematology. Lea & Febiger. Philadelphia. 5. Duncan JR. 1992. Veterinary Laboratory Clinical Pathology. The Iowa State University. Press Ames. Iowa

57. KRP 442 Avian Pathology

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	8th (even) Semester
Person responsible for the module	Dr. Drh. Wiwin Winarsih, MSi, APVet No prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in krp441
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	**1**.Saif et al. 2008. Disease of Poultry. 10th ed. Iowa University Press. 2. Jordan FTW. 1990. Veterinary Pathology 6th ed. Williams & Wilkins. 3. Cotran, RS. V. Kumar dan SL. Robin, 1994. Pathologic Basis of Disease 5th ed. WB Saunders Company, USA 4. Damjanov I. 1996. Histopathology A color atlas and text book. Williams & Wilkins 5. Jubb KVF, PC Kennedy and N Palmer. 1992. Pathology of Domestic Animals 4th ed. Academic Press, Inc. 6. McGavin MD, Zachary JF. Pathologic Basis of Veterinary Disease

58. KRP 413 Clinical Dietetics

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th and 8th (odd and even) Semester
Person responsible for the module	Dr. drh. Sus Derthi Widhyari, MSi No prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in ntp436, krp411, krp421, krp323 atau bersamaan
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Davies C, Shell L. 2002. Common Small Animal Diagnoses. An Algorithmic Approach. Philadelphia: WB Saunders Company. Hlm 6-9, 72-75, 92-93, 130-133, 138-141, 194-199. 2. Ettinger SJ, Feldman EC. 1983. Textbook of Veterinary Internal Medicine. 4th Ed. by W.B. Saunders Comp. 3. Hand *et al,* 2000. Small Animal Clinical Nutrition, 4th Edition. Walsworth Publish Company, Marceline, Missouri. 4. Morgan RV. 2008. Handbook of Small Animal Practice. Ed ke-5. Vol 2.4. Blowey RWAD, Weaver, 1991. A Colour Atlas of Diseases & Disorders of Cattle. Wolfe Publishing Ltd. 5. Pibot P *et al.,* 2008. Encyclopediaof Feline Clinical Nutrition **6.** Price SA dan Wilson LMC. 2006. Pathophysiology. The Concept of Clinical Disease Processes. Ed ke-6. Jakarta: Penerbit Buku Kedokteran EGC.

59. KRP 414 Clinical Demonstration

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	8th (even) Semester
Person responsible for the module	Dr. drh. Sus Derthi Widhyari, MSi No kuliah
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	1 SCH x 1.5 = 1.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in krp411, krp323, krp421
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course
Reading list	1. Davies C, Shell L. 2002. Common Small Animal Diagnoses. An Algorithmic Approach. Philadelphia: WB Saunders Company. Hlm 6-9, 72-75, 92-93, 130-133, 138-141, 194-199. 2. Ettinger SJ, Feldman EC. 1983. Textbook of Veterinary Internal Medicine. 4th Ed. by W.B. Saunders Comp. 3. Hand *et al,* 2000. Small Animal Clinical Nutrition, 4th Edition. Walsworth Publish Company, Marceline, Missouri. 4. Morgan RV. 2008. Handbook of Small Animal Practice. Ed ke-5. Vol 2.4. Blowey RWAD, Weaver, 1991. A Colour Atlas of Diseases & Disorders of Cattle. Wolfe Publishing Ltd. 5. Pibot P *et al.,* 2008. Encyclopediaof Feline Clinical Nutrition **6.** Price SA dan Wilson LMC. 2006. Pathophysiology. The Concept of Clinical Disease Processes. Ed ke-6. Jakarta: Penerbit Buku Kedokteran EGC.

60. KRP 451 Pharmaceutical Preparations and General Therapy

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th and 8th (odd and even) Semester
Person responsible for the module	Dr. Lina Noviyanti Sutardi, S.Si, Apt, M.Si prak
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to-face lecture classes with the help of video screenings and discussion sessions, practicum classes, presentation, and independent learning through individual and group problem-based learning assignments. This course has been provided with handouts, PowerPoint, other references that are relevant, and audio-visual content created for this course.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 83 hours/semester Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Lecture Class: 2 hours x 14 weeks = 28 hours/semester Practicum Class: 2.5 hours x 14 weeks = 35 hours/semester Midterm and Final Exams: 2 hours x 2 sessions = 4 hours total sessions Private study including examination preparation, specified in hours: Group Assignment: 1 hour x 3 weeks = 6 hours/semester Examination preparation: 1 hour x 14 weeks = 14 hours/semester
Credit points	2 SCH x 1.5 = 3 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite course in aff332
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively the aetiology, epidemiology, transmission, pathogenesis, clinicopathology, and diagnostic procedures using various techniques and able to perform at least one technique to detect several types of viruses in the context of prevention, control and monitoring of viral diseases in animals.

Content	This course covers the basic concepts of parasites and parasitism, taxonomy, morphology, and biology, as well as diseases caused by protozoa and helminth infections in domestic, wildlife, and aquatic animals that are economically and/or publicly relevant. The pathogenesis, clinical signs, distribution, and control of the disease are all discussed. The purpose of the practicum is to help students comprehend the identification, confirmation, and control of endoparasites.
Examination forms	Midterm Exam : paper or online based test Final Exam : paper or online based test Problem-Based Learning Papers and Presentations
Study and examination requirements	**Cognitive:** Midterm Exams, Final Exam, Practicum Exams, Assignments **Psychomotor:** Practicums **Affective:** Assessed from the element/variables achievement, namely contributions (attendance, active participation, role, initiative, language), being on time, and effort during the course

Reading list	1. Kementerian Kesehatan.1995. Farmakope Indonesia. Edisi Empat. Jakarta. 2. Kementerian Kesehatan. 2014. Farmakope Indonesia. Edisi Lima. Jakarta. 3. Dirjen POM RI. 1987. Cara Pembuatan Obat Yang Baik dan Benar, Edisi Kedua, Jakarta. 4. Kementerian Pertanian. 2008. Farmakope Obat Hewan Indonesia, Jakarta. 5. Tranggono RI, Latifah F. 2007. Buku Pegangan Ilmu Pengetahuan Kosmetik. Gramedia Pustaka Utama. Jakarta. 6. Suharmi S, Murini T. 2009. Bentuk Sediaan Obat. Bagian Farmasi Kedokteran Fakultas Kedokteran UGM. Yogyakarta 7. Didona N. 2013. Sediaan dan Dosis Obat. Penerbit Erlangga. Jakarta. 8. Gibson M. 2009. Pharmaceutical Preformulation and Formulation, Second Edition,Informa Health Care, New York. 9. Harborne JB. 1987. Metode Fitokimia. ITB Press. Bandung. 10. Howard C. A. 2010. Bentuk Sediaan Farmasetis dan Sistem Penghantaran Obat, Edisi sembilan, Penerbit EGC, Jakarta. 11. Voight R, 1996, Teknologi Farmasi, Edisi Kedua, Gadjah Mada Press, Yogyakarta. 12. Barel AO., Paye M., Maibach Hl, 2009, Handbook of Cosmetics Science and Technology, Third Edition, Informa, New York. 13. Government regulation regarding the classification, registration, distribution, use, and control of veterinary drugs. **14.** Relevant scientific publication articles

61. FKH 1405 Colloquium

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	7th and more (odd and even) Semester
Person responsible for the module	Academic commission
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to- face discussion sessions, pre-research and writing final research proposal , Oral Presentation and Discussion
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 35.5 hours/semester Discussion: 1 hours x 14 weeks = 14 hours/semester writing research proposal: 1.5 hours x 14 sessions = 21 hours total Oral Presentation and discussion = 0.5 hours/semester
Credit points	1 SCH x 1.5 = 1.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite in all courses
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively their research.
Content	Content of undergraduate thesis depent on the research
Examination forms	Presentation and oral examination
Study and examination requirements	**Cognitive:** discussion about topic research **Psychomotor:** presentation
Reading list	[PPKI] Pedoman Penulisan Karya Ilmiah IPB. edisi 4. 2020. IPB Press.

62. FKH 1406 Seminar

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	8th and more (odd and even) Semester
Person responsible for the module	Academic commission
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to- face discussion sessions, research and writing final project, Oral Presentation and Discussion
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 36 hours/semester Discussion: 1 hours x 14 weeks = 14 hours/semester writing research proposal: 1.5 hours x 14 sessions = 21 hours total Oral Presentation and discussion = 1 hours/semester
Credit points	1 SCH x 1.5 = 1.5 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite in all courses
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively their research.
Content	Content of undergraduate thesis depent on the research
Examination forms	Presentation and oral examination
Study and examination requirements	**Cognitive:** discussion about topic research **Psychomotor:** presentation
Reading list	[PPKI] Pedoman Penulisan Karya Ilmiah IPB. edisi 4. 2020. IPB Press.

63. FKH 499 Undergraduate Thesis

Module designation	Bachelor Veterinary Science Program
Semester(s) in which the module is taught	8th and more (odd and even) Semester
Person responsible for the module	Academic commission
Language	Indonesian (regular class), English (international class)
Relation to curriculum	Compulsory course for Bachelor Veterinary Science Program
Teaching methods	Face-to- face discussion sessions, research and writing final project.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 140 hours/semester Discussion: 2.5 hours x 14 weeks = 35 hours/semester Research: 5 hours x 14 weeks = 70 hours/semester writing final project: 2.5 hours x 14 sessions = 35 hours total
Credit points	4 SCH x 1.5 = 6 ECTS
Required and recommended prerequisites for joining the module	Requires prerequisite in all courses
Module objectives/intended learning outcomes	Students can explain communicatively and interpretively their research.
Content	Content of undergraduate thesis depent on the research
Examination forms	Presentation and oral examination
Study and examination requirements	**Cognitive:** final exam **Psychomotor:** research
Reading list	[PPKI] Pedoman Penulisan Karya Ilmiah IPB. edisi 4. 2020. IPB Press.