Faculty *of*
Veterinary Medicine

MODUL HANDBOOK

PROFESSIONAL EDUCATION OF VETERINARY MEDICINE

2024

https://fkh.ub.ac.id/en/

MODULE 1

Module Name	Surgery and Radiology Internship
Code	PDH70011
Study Program	Professional Education of Veterinary Medicine
Person Responsible For This Module	drh. Nofan Rickyawan, M.Sc
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching Format	1. Discussion 2. Lecture 3. Laboratory Work 4. Project Based Learning
Workload	250 minutes of lecture class 300 minutes of case study 300 minutes of self-study
ECTS	9
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 5 SCU = 5 x 1,8 ECTS = 9 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Performing basic patient handling skills, including patient handling restraint, intravenous catheterization, urinary catheterization, intubation, and cardiopulmonary resuscitation on patients pre-, peri-, and postoperative 2. Performing anesthesia and patient monitoring on patients pre-, peri-, and post-operation accurately and precisely

	3. Performing aseptic and lege artis surgical procedures on patients pre-, peri-, and post-operation with discipline 4. Student able to conduct and construe radiographic and ultrasonographic examinations on patients 5. Students are able to communicate and collaborate in performing various medical procedures and communicating with clients
Module Descriptions	Surgery and radiology internships strengthen both theoretical and practical aspects of surgery and radiology for small and large animals, including patient evaluation, diagnosis establishment, discussion, pre-operative procedures, surgery, and post-operative care under the supervision of a veterinarian.
Learning Contents	1. Skill Lab: Intravenous catheterization, urinary catheterization, intubation, cardiopulmonary resuscitation 2. Surgery on small and large animals 3. Radiography and ultrasonography 4. Off-campus Animal Clinic Internship
Evaluation Form /Assessment	1. Project Based Method 50% 2. Case Study 50%
Study and examination requirements	1. Students attendance must be 100% as a requirement for taking the exam. 2. Students must take an exam as a graduation requirement.
Reading List/Book References	1. Small Animal Surgery 5th Edition 2. Small Animal Emergency and Critical Care Medicine 3. Small Animal Fluid Therapy 4. Small Animal Anaesthesia and Pain Management 5. Small Animal Bandaging, casting, splinting and drains 6. Veterinary Surgery Small Animal 2nd Edition 7. Technique in Large Animal Surgery 4th Edition 8. Farm Animal Medicine and Surgery 9. Equine Surgery 5th Edition 10. The Practice of Veterinary Anaesthesia: Small Animals, Birds, Fish, and Reptiles 11. Zoo and Wildlife Immobilization and Anesthesia 1st Edition 12. WSAVA guidelines 13. AAHA guidelines 14. WHO guidelines 15. Plumb's Veterinary Drug Handbook 16. BSAVA

MODULE 2

Module Name	Internal Diseases of Small Animals
Code	PDH70012
Study Program	Professional Education of Veterinary Medicine
Person Responsible For This Module	drh. Tiara Widyaputri, M.Si
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching Format	1. Discussion 2. Lecture 3. Case Study 4. Laboratory Work 5. Project Based Learning
Workload	250 minutes of lecture class 300 minutes of case study 300 minutes of self-study
ECTS	9
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 5 SCU = 5 x 1,8 ECTS = 9 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Capable of evaluating medical records according to the disease history and demonstrating appropriate actions 2. Capable of determining diagnosis and therapeutic actions for internal diseases in small animals 3. Capable of outline preventive measures for internal diseases in small animals

	4. Capable of handling and/or diagnosing a variety of systemic conditions 5. Respiratory disorders 6. Digestive disorders 7. Urogenital disorders 8. Circulatory disorders 9. Nervous system disorders 10. Skin disorders 11. Musculoskeletal disorders 12. Others (dentistry, ENT, ophthalmology)
Module Descriptions	Having the skills to perform *lege artis* medical procedures; dealing with a number of diseases in small animals; carrying out effective communication with clients, the public, and other health professional personnel; having the ability to carry out anamnesis, medical records, approval of ethical actions, diagnosis of disease, writing prescriptions, doctor's certificates, and client education.
Learning Contents	1. Performing physical examination of the integumentary system 2. Diagnosing integumentary system disorders 3. Performing physical examination of ENT and eyes 4. Diagnosing ENT and eye disorders 5. Performing physical examination of the respiratory system 6. Diagnosing respiratory system disorders 7. Performing physical examination of the circulatory system 8. Diagnosing circulatory system disorders 9. Performing physical examination of the digestive system 10. Diagnosing digestive system disorders 11. Performing physical examination of the urogenital system 12. Diagnosing urogenital system disorders 13. Performing physical examination of the nervous and musculoskeletal systems 14. Diagnosing nervous and musculoskeletal system disorders
Evaluation Form /Assessment	1. Project Based Method 50% 2. Case Study 50%
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading List/Book References	1. Widodo S, Sajuthi D, Choliq C, Wijaya A, Wulansari R, Lelana RPA. 2011. *Diagnostik Klinik Hewan Kecil*. IPB Press: Bogor

	2. Rijnberk, F.J VanSluijs. 2009. *Medical History and Physical Examination in Companion Animals 2nd Edition*. Elsevier: China 3. Nelson RW, Couto CG. 2005. *Manual of Small Animal Internal Medicine Third Edition*. Mosby

MODULE 3

Module Name	Internal Diseases of Large Animals Internships
Code	PDH70013
Study Program	Professional Education of Veterinary Medicine
Person Responsible For This Module	drh. Dodik Prasetyo, M.Vet
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching Format	1. Discussion 2. Lecture 3. Literature review 4. Field case studies
Workload	200 minutes of lecture class 240 minutes of case study 240 minutes of self-study
ECTS	7,2
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 4 SCU = 4 x 1,8 ECTS = 7,2 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Capable of evaluating medical records, based on the disease history, and demonstrate appropriate actions. 2. Capable of determining the diagnosis and therapeutic actions for internal diseases of large animals. 3. Capable of describing preventive measures for cases of internal diseases in large animals.

	4. Perform handling and diagnosis of various cases of the following systems: a. Respiratory disorders b. Digestive disorders c. Urogenital disorders d. Locomotion and nervous disorders e. Metabolic disorders f. Circulatory disorders g. Skin disorders
Module Descriptions	The Large Animal Internal Internship prepares students to acquire skills in performing medical procedures that are lege artis; skills in managing a range of diseases in large animals; effective communication with clients, the community, and other healthcare professionals; the ability to conduct anamnesis, medical record-keeping, ethical consent for procedures, disease diagnosis, prescription writing, medical certificates, and client education.
Learning Contents	1. Introduction and overview of large animal diseases 2. Conduct clinical examination, diagnosis, prognosis, and determine therapy for the respiratory system in large animals 3. Conduct clinical examination, diagnosis, prognosis, and determine therapy for the digestive system in large animals 4. Conduct clinical examination, diagnosis, prognosis, and determine therapy for the urogenital system in large animals 5. Conduct clinical examination, diagnosis, prognosis, and determine therapy for the locomotion and nervous systems in large animals 6. Conduct clinical examination, diagnosis, prognosis, and determine therapy for the metabolic system in large animals 7. Conduct clinical examination, diagnosis, prognosis, and determine therapy for the circulatory system in large animals 8. Conduct clinical examination, diagnosis, prognosis, and determine therapy for the skin in large animals
Evaluation Form /Assessment	1. Project Based Method 2. Case Study
Study and examination requirements	1. This internship requires 100% attendance for the examination.

	2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	1. Constable, P.D., Hinchcliff, K.W., Done, S.H., Grunberg, W. 2017. *Veterinary Medicine 11th Edition*. Elsevier 2. Anderson, D. And Rings, D.M. 2009. *Current Veterinary Therapy Food Animal Practice 5*. Elsevier. 3. Divers, T.J. and Peek, S.F. *Disease of Dairy Cattle*. Saunders. Elsevier.

MODULE 4

Module Name	Veterinary Reproduction Internship
Code	PDH70014
Study Program	Professional Education of Veterinary Medicine
Person Responsible For This Module	drh. Aulia Firmawati, M.Vet
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching format	1. Discussion 2. Lecture 3. Project Based Learning 4. Case Study 5. Laboratory Work
Workload	200 minutes of lecture class 240 minutes of case study 240 minutes of self study
ECTS	7,2
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 4 SCU = 4 x 1,8 ECTS = 7,2 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Uphold truth, foster unity, possess a spirit of nationalism, and have a strong sense of patriotism. 2. Have knowledge of the basic concepts, principles, and theories related to veterinary reproduction.

	3. Have insight into veterinary ethics and an understanding of the roles and responsibilities of the veterinary profession. 4. Have skills in applying science and technology from the reproduction laboratory in the field. 5. Have knowledge of the basic concepts, principles, and theories related to veterinary reproduction.
Module Descriptions	The Reproduction Internship provides students with knowledge about animal reproductive physiology, artificial insemination techniques and practices, pregnancy detection, birth assistance, and infertility treatment in both large and small animals.
Learning Contents	1. Anatomy and Physiology of Male Domestic Animals 1 (Livestock) 2. Anatomy and Physiology of Male Domestic Animals 2 (Pet Animals) 3. Anatomy and Physiology of Female Domestic Animals 1 (Livestock) 4. Anatomy and Physiology of Female Domestic Animals 2 (Pet Animals) 5. Estrous Cycle (Vaginal Swab in Rats) and Synchronization and Estrous Stimulation 6. Reproductive Endocrinology 7. Semen Collection and Examination in Domestic Animals (Livestock) 8. Semen Dilution and Frozen Semen Processing in Domestic Animals (Livestock) 9. Oocyte Aspiration and Embryo Flushing/Observation of Frozen Embryos 10. Eutocia and Postpartum Management (Lactation) in Domestic Animals 1 (Livestock) 11. Eutocia and Postpartum Management (Lactation) in Domestic Animals 2 (Pet Animals) 12. Dystocia in Domestic Animals 1 (Livestock) 13. Dystocia in Domestic Animals 2 (Pet Animals) 14. Pre and Postpartum Disorders in Domestic Animals 15. Lectures/Discussions (PBL)/Reports on Domestic Animals 16. Internship at KUD/POSKEWAN Topic: Large Animal Reproduction 17. Maternity Internship (Small Animals) at RSHP UB

Evaluation Form /Assessment	1. Project Based Method 50% 2. Case Study 50%
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	1. McDonalds, 2003, Veterinary Endocrinology and Reproduction Fifth Edition 2. Reproductive Endocrinology and Biology (E. Edwar Bittar, 1998) 3. Physiology of Reproduction, 3rd Edition (Neill Knobil and Neill's, 2006) 4. Clinical Canine and Feline Reproduction Evidence Based Answers, 1st Edition (Margaret V. Root Kustritz, 2010) 5. Comparative Reproductive Biology, 1st Edition (Heide Schatten, 2007) 6. Equine Reproductive Physiology, Breeding and Study Management, 2nd Edition (M. C. G. Davies Morel, 2003) 7. Arthur's Veterinary Reproduction 8th Edition (David E. Noakes, 2001) 8. Fisiologi Reproduksi, Mozes Toelihere, 1987 9. Fisiologi Reproduksi Ternak, Ismudiono dkk., Airlangga Press, 2000 10. Fisiologi Ternak, Nuryadi, UB press, 2004

MODULE 5

Module Name	Anatomical Pathology Internship
Code	PDH70015
Study Program	Professional Education of Veterinary Medicine
Person Responsible For This Module	drh. Andreas Bandang Hardian, MVSc
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching Format	1. Discussion 2. Lecture 3. Laboratory Work 4. Small Group Discussion
Workload	150 minutes of lecture class 180 minutes of case study 180 minutes of self study
ECTS	5,4
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 3 SCU = 3 x 1,8 ECTS = 5,4 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Capable of demonstrating a comprehensive necropsy protocol, starting from information collection, necropsy preparation, external examination, dissection, internal examination, specimen collection, disposal and sterilization, and reporting necropsy results for mammalian, avian, fish, and reptilian species.

	2. Capable determining the morphological description of lesions and histopathology, categorize pathological changes, provide morphological (anatomical pathology) and histopathological diagnoses, and deduce pathogenesis. 3. Capable of communicate anatomical pathology diagnosis results both orally and in writing, as well as provide recommendations for further examination and actions.
Module Descriptions	The anatomical pathology internship in the PEVM at FVM UB develops learning methods based on diagnostic pathology. This internship provides education under the umbrella of veterinary anatomical pathology related to advanced examinations in clinical pathology, parasitology, microbiology, and biomolecular fields, reflecting the professional diagnostic activities in the field that are inherently interconnected and continuous to produce accurate diagnoses. This internship emphasizes outcome-based methods where diagnosis serves as the basis for therapy, so other examinations beyond veterinary anatomical pathology can enhance diagnostic accuracy. The materials for diagnostic skills in anatomical pathology are highlighted during this internship, including morphological description of lesions, categorization of pathological changes, morphological and histopathological diagnosis, and pathogenesis deduction. Additionally, students are expected to communicate examination results and diagnoses both verbally and in writing using professional language and medical nomenclature for peers, as well as nonexpert terms for the general public.
Learning Contents	A. Lecture Sessions 1. Week I a. Laboratory Induction and Internship Introduction b. Necropsy, Specimen Collection, and Specimen Management c. Necropsy of Avian Species: Dissection Methods and Anatomical Variations d. Necropsy of Quadrupedal Mammals: Dissection Methods and Anatomical Variations e. Necropsy of Fish and Aquatic Megafauna: Dissection Methods and Anatomical Variations 2. Week II a. Necropsy of Reptile Species: Dissection Methods and Anatomical Variations b. Tutorial I: Morphological Lesion Diagnosis and Histopathology (FGD) c. Tutorial II: Morphological Lesion Diagnosis and Histopathology (LGD)

	d. Strategic Diseases in Avian Species: Macroscopic and Microscopic Changes e. Strategic Diseases in Ruminants: Macroscopic and Microscopic Changes 3. Week III 1. Strategic Diseases in Non-Ruminants: Macroscopic and Microscopic Changes 2. Strategic Diseases in Fish: Macroscopic and Microscopic Changes 3. Strategic Diseases in Reptile Species: Macroscopic and Microscopic Changes 4. Strategic Diseases in Laboratory Animals and Nonhuman Primates 5. Strategic Diseases in Aquatic Megafauna: Macroscopic and Microscopic Changes 4. Week IV: Case Consultations and Anatomical Pathology Internship Exam B. Practical Sessions 1. Disease Investigation in Veterinary Anatomical Pathology - Necropsy and Histopathology (case studies) 2. Disease Investigation in Veterinary Anatomical Pathology - Necropsy and Histopathology (independent cases)
Evaluation Form /Assessment	1. Communication ethics and individual case presentation 20% 2. Necropsy systematics 40% 3. Examination analytics and anatomical pathology diagnostic 40%
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	1. Brooks, J. W. (Ed.). (2018). Veterinary Forensic Pathology, Volume 1 (Vol. 1). Springer. 2. Maxie, G. (2015). Jubb, Kennedy & Palmer's Pathology of Domestic Animals-EBook (Vol. 1-3). Elsevier Health Sciences. 3. McDonough, S. P., & Southard, T. (Eds.). (2016). Necropsy guide for dogs, cats, and small mammals. John Wiley & Sons.

	4. Jacobson, E. R. (Ed.). (2007). Infectious diseases and pathology of reptiles: color atlas and text. CRC Press. 5. Garner, M. M., & Jacobson, E. R. (Eds.). (2020). Noninfectious Diseases and Pathology of Reptiles: Color Atlas and Text, Diseases and Pathology of Reptiles, Volume 2. CRC Press. 6. Farris, Seth & Squires, Michiko & Ridgely, Frank & Lavergne, Emma & Serota, Mitchell & Mazzotti, Frank. (2015). Necropsies of Reptiles: Recommendations and Techniques for Examining Invasive Species. University of Florida Electronic Data Information Source. 7. Lucio-Martinez, B. and Korich, J.A. 2010. Illustrated Guide to Poultry Necropsy and Diagnosis. Cornell University College of Veterinary Medicine. Ithaca: New York. 8. Tahseen Abdul-Aziz, H. John Barnes, Oscar J. Fletcher. 2016. Avian Histopathology, 4th Edition. American Association of Avian Pathologists (AAAP).

MODULE 6

Module Name	Veterinary Microbiology and Immunology Internship
Code	PDH70016
Study Program	Professional Education of Veterinary Medicine
Person Responsible For This Module	drh. Fidi Nur Aini Eka Puji Dameanti, M.Si
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching Format	1. Discussion 2. Evaluation
Workload	100 minutes of lecture class 120 minutes of case study 120 minutes of self study
ECTS	3,6
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 2 SCU = 2 x 1,8 ECTS = 3,6 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Students have laboratory skills to support the implementation of laboratory diagnoses in the fields of Microbiology and Virology (Skills). 2. Students have the ability and responsibility to independently seek knowledge in Veterinary Microbiology and Virology (Knowledge). 3. Students are able to perform laboratory diagnostic techniques (bacterial, viral, and fungal identification, as well

	as serological testing) and are capable of interpreting results and establishing diagnoses (Skills).
Module Descriptions	The internship in microbiology and virology laboratory diagnosis includes a physical examination, recording medical history, analyzing laboratory data, and understanding the technical aspects of microbiology and virology laboratory analysis. The purpose of this internship is to enhance the skills and knowledge of students in making microbiological diagnoses.
Learning Contents	1. Make accurate provisional diagnoses. 2. Collect samples/specimens correctly. 3. Process samples/specimens correctly. 4. Examine samples/specimens correctly. 5. Interpret diagnoses.
Evaluation Form /Assessment	1. Laboratory Activity and Report 30% 2. Softskill 10% 3. Written exam, pretest, posttest, and discussion 30% 4. Oral test 30%
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading List/Book References	1. Abbas, A.K., Andrew, H.L., Shiv, P. 2018. Cellular and Molecular Immunology 9th Edition. Elsevier. 2. Bergey's Identification Flowchart and Roadmap Outline Vol 3-5. 3. Leboffe, MJ., Pierce, BE. 2011. A Photographic Atlas for The Microbiology Laboratory 4th Edition. Morton Publishing Company. 4. Maclachlan, NJ., Dubovi, EJ. 2010. Fenner's Veterinary Virology 4th Edition. Academic Press Elsevier, London. 5. Owen, J.A., Jenni, P., Sharon, A.S. 2009. Kuby Immunology 7th Edition. W.H. Freeman and Company. 6. Tizard, IR. 2004. Veterinary Immunology An Introduction 7th Edition. Saunders Elsevier. 7. Vandepitte, J., Verhaegen, J., Engbaek, K., Rohner, P., Piot, P., Heuck, CC. 2003. Basic Laboratory Procedures in Clinical Bacteriology 2nd Edition. World Health Organization.

MODULE 7

Module Name	Parasitology Internship
Course Code	PDH70017
Study Program	Professional Education of Veterinary Medicine
Person Responsible for This Module	drh. Reza Yesica, M.Sc
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching format	1. Discussion 2. Lecture 3. Case Study 4. Laboratory Work
Workload	100 minutes of lecture class 120 minutes of case study 120 minutes of self study
ECTS	3,6
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 2 SCU = 2 x 1,8 ECTS = 3,6 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Capable of identifying and diagnosing ectoparasitic and endoparasitic parasitic diseases (helminths and protozoa) in large and small ruminants (cognitive and psychomotor) 2. Capable of identifying and diagnosing ectoparasitic and endoparasitic parasitic diseases (helminths and protozoa) in non-ruminant animals and poultry (cognitive and psychomotor) 3. Capable of identifying and diagnosing ectoparasitic and endoparasitic parasitic diseases (helminths and protozoa) in pet animals and wild animals (cognitive and psychomotor). 4. Capable of identifying and diagnosing ectoparasitic and endoparasitic parasitic diseases (helminths and protozoa) in reptiles and aquatic animals (cognitive and psychomotor)

	5. Capable of handling laboratory diagnostic techniques in cases of parasitic diseases (ectoparasites and endoparasites) in animals independently and reporting the results individually and in groups (psychomotor and attitude).
Module Descriptions	Internship activities of the Veterinary Parasitology Laboratory prepare students to be proficient in the concept of parasitism, including helminth parasites, protozoa, and ectoparasites in animals, including classification, morphology, habitat and life cycle, behavior, significance, and relationship as agents of animal disease, epidemiology, transmission methods, clinical symptoms, pathogenesis, immunity, diagnosis, prognosis, control, and prevention, accompanied by learning about sampling and laboratory examination so that it can be used to confirm the diagnosis of a disease.
Learning Contents	1. Introduction to laboratory and field diagnosis of parasitic diseases 2. Sampling techniques and diagnostic techniques for parasitic diseases in animals 3. Techniques for diagnosing various cases of endoparasitic and ectoparasitic diseases of large and small ruminants (classification, morphology, habitat and life cycle, behaviour, significance and relationship as animal disease agents, epidemiology, modes of transmission, clinical symptoms, pathogenesis, immunity, diagnosis, prognosis, control and prevention) 4. Techniques for diagnosing various cases of non-ruminant endoparasitic and ectoparasitic diseases (classification, morphology, habitat and life cycle, behaviour, significance and relationship as animal disease agents, epidemiology, modes of transmission, clinical symptoms, pathogenesis, immunity, diagnosis, prognosis, control and prevention) 5. Techniques for diagnosing various cases of endoparasitic and ectoparasitic diseases in poultry (classification, morphology, habitat and life cycle, behaviour, significance and relationship as animal disease agents, epidemiology, modes of transmission, clinical symptoms, pathogenesis, immunity, diagnosis, prognosis, treatment, control and prevention) 6. Techniques for diagnosing various cases of endoparasite and ectoparasite diseases of pet animals (classification, morphology, habitat and life cycle, behaviour, significance and relationship as agents of animal disease, epidemiology,

	modes of transmission, clinical symptoms, pathogenesis, immunity, diagnosis, prognosis, treatment, control and prevention) 7. Techniques for diagnosing various cases of endoparasitic and ectoparasitic diseases of reptiles, aquatic and wild animals (classification, morphology, habitat and life cycle, behaviour, significance and relationship as agents of animal diseases, epidemiology, modes of transmission, clinical symptoms, pathogenesis, immunity, diagnosis, prognosis, treatment, control and prevention) 8. Presentation of case studies of parasites (ectoparasites, helminths and protozoa) individually and in groups 9. Read the learning module and parasite text book independently
Evaluation Form /Assessment	1. Average score of Quiz: 10% 2. Structured assignment: 25% 3. Written Test: 25% 4. Oral test: 40%
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	1. Taylor, M. A., Coop, R. L., & Wall, R. L. (2007). *Parasites of the Integument*. *In Veterinary* parasitology. 2. Mehlhron , H. 2012. Animal Parasites_ Diagnosis, Treatment, Prevention-Springer International Publishing. 3. Anne M Zajac and Gary A Conboy. (2007). *Veterinary Clinical Parasitology*, 7th ed. In The Canadian Veterinary Journal. la 4. Revue Veterinaire Canadienne (Vol. 48, Issue 2). 5. Hendrix, C. M., & Robinson, E. (2011). *Diagnostic Parasitology for Veterinary Technicians*, 4th Edition. 6. https://www.elsevier.com/books/diagnostic-parasitology-for-veterinary- technicians/hendrix/978-0-323-07761-3 7. Urquhart, G.M., Armour, J., Duncan, J.L., Dunn, A.M., Jenning, F.M. 2001. *Veterinary Parasitology*. Second Edition. Blackwell Publishing.

MODULE 8

Module Name	Clinical Pathology Internship
Code	PDH70016
Study Program	Professional Education of Veterinary Medicine
Person Responsible For This Module	drh. Tiara Widyaputri, M.Si
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching format	1. Discussion 2. Lecture 3. Case Study 4. Laboratory Work
Workload	100 minutes of lecture class 120 minutes of case study 120 minutes of self study
ECTS	3,6
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 2 SCU = 2 x 1,8 ECTS = 3,6 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Capable of collecting biological samples, including blood, urine, and body fluids. 2. Capable of performing examinations and tests on biological materials related to hematology, clinical chemistry, urinalysis, and body fluid analysis. 3. Capable of analyzing and interpreting abnormalities in hematology, clinical chemistry, urinalysis, and body fluid analysis. 4. Capable of concluding the results of hematology, clinical chemistry, urinalysis, and body fluid analysis from various samples to support diagnostic determination.
Module Descriptions	The Clinical Pathology Internship is a laboratory diagnosis internship that applies principles and techniques for examining

	biological materials, clinical pathological changes, and interpreting results from the hematology and clinical chemistry of blood, urine, feces, and other body fluids to support diagnostic determination.
Learning Contents	1. Lab Skill: Hematology examination, blood chemistry, urine, and other body fluids from various animal species. 2. Off-Campus Veterinary Clinic Internship
Evaluation Form /Assessment	1. Project Based Method 50% 2. Case Study 50%
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	

MODULE 9

Module Name	Veterinary Public Health Internship
Course Code	PDH70019
Study Program	Professional Education of Veterinary Medicine
Person Responsible for This Module	drh. Widi Nugroho, Ph.D
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching format	1. Discussion 2. Lecture 3. Case Study 4. Field Clinical Practice
Workload	200 minutes of lecture class 240 minutes of case study 240 minutes of self study
ECTS	7,2
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 4 SCU = 4 x 1,8 ECTS = 7,2 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Vet Health Laboratory a. Quality and Safety Inspection of Meat and Processed Products b. Quality and Safety Inspection of Milk and Processed Products c. Quality and Safety Inspection of Eggs and Processed Products d. GMP, SSOP, HACCP 2. Quarantine Laboratory a. Quarantine administration b. Alma quarantine procedures for MP HPHK domestic/import/export traffic flow

	c. Laboratory Examination to Confirm the Diagnosis of HPHK in MP HPHK 3. Service Laboratory a. Administration of the Service in Charge of the Animal Health Sector b. Laboratory Examination to Confirm the Diagnosis of Animal Diseases in the Field c. Epidemiological studies of animal and zoonotic diseases 4. RPH Laboratory a. Antemortem and postmortem examination b. Inspection of animal welfare implementation in slaughterhouses c. Feasibility Assessment of Slaughterhouse Waste Design and Processing
Module Descriptions	This course consists of 4 parts, including: Vet Health Laboratory, Quarantine, Department that oversees the Health Sector Animals, and RPH. a. The Internship at the Vet Health Laboratory explains the quality and safety inspection of food of animal origin and its processed products which are related to public health b. Internship in Quarantine explains the role of veterinarians in animal quarantine, the role of quarantine as the front guard in preventing and spreading animal diseases, quarantine procedures and MP HPHK traffic flow, as well as the role of quarantine in relation to SPS which is a joint commitment of several countries in the WTO c. Internship in the Service and RPH explains the role of veterinarians in the service which covers the field of animal health, including the field of veterinary public health, the role of veterinarians in periodic surveillance and monitoring of animal diseases in the field, as well as the role of veterinarians in RPH is related to ensuring the quality and safety of providing meat for public consumption, through antemortem, postmortem inspections and implementing animal welfare
Learning Contents	1. Internship learning materials in the Veterinary Health Laboratory, including: a. Legislation for Guaranteeing Animal Products that are Safe, Healthy, Intact and Halal b. Safety of Food Quality of Animal Origin c. Quality and Safety Testing of Meat and Meat Processing

	d. Quality and Safety Testing of Milk and Dairy Products e. Quality and Safety Testing of Eggs and Processed Eggs 2. Learning materials for Internship in Quarantine, including: a. The Role of Veterinarians as the Front Guard in Preventing the Spread of Animal Diseases b. Quarantine Procedures and MP HPHK Traffic Flow c. SPS (Sanitary and Phytosanitary) d. Types of Testing in the Animal Quarantine Laboratory e. Status of Regions in Indonesia Related to Animal Diseases 3. Internship learning materials at the Service and RPH, including: a. The Role of Veterinarians in the Department that Oversees the Animal Health Sector, including those related to Veterinary Public Health Affairs b. Official Organizational Structure, including its Relation to the Veterinary Profession in Official Organizational Structure c. Types of Epidemiological Studies in Surveillance and Monitoring Activities for Animal Diseases in the Field d. The role of veterinarians in slaughterhouses as guarantors of the quality and safety of meat supplies, through antemortem activities and post-mortem e. Feasibility of abattoir design that complies with standards, including facilities and techniques for processing abattoir waste f. Implementation of Animal Welfare in Abbatoir
Evaluation Form /Assessment	1. Project Based Method 2. Case Study
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	1. Buku Pedoman Pelaksanaan Rotasi Kesmavet 2. SNI dan CODEX untuk Pangan Asal Hewan dan Produk Olahannya 3. Peraturan Perundangan terkait dengan Karantina 4. Undang-Undang Nomor 41 Tahun 2014 5. Undang-Undang Nomor 23 Tahun 2014 6. Dairy Processing Improving Quality 7. Fundamental Dairy Products 8. Encyclopedia of dairy Sciences

	9. Improving the safety and Quality of Eggs and Egss Product 10. Handbook of Muscle Food Analysis 11. Meat Identification 12. Keputusan Menteri Pertanian 13. Peraturan Menteri Pertanian 14. Peraturan Pelaksanaan Dinas dan RPH di Kabupaten/Kota

MODULE 10

Module Name	Pharmaceutical Science Internship
Course Code	PDH700003
Study Program	Professional Education of Veterinary Medicine
Person Responsible for This Module	Agri Kaltaria Anisa, S.Farm., Apt., M.Si
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching format	1. Discussion 2. Laboratory Work 3. Evaluation
Workload	100 minutes of lecture class 120 minutes of case study 120 minutes of self study
ECTS	3,6
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 2 SCU = 2 x 1,8 ECTS = 3,6 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Able to understand drug preparation 2. Able to understand the calculation of reading doses and writing prescriptions 3. Implement how to give medicine to animals
Module Descriptions	The prescription science Internship is a consolidation of activities for calculating doses and concentrations, writing prescriptions, and CPOHB
Learning Contents	1. Able to determine the type of drug that is suitable for preventive and curative action on animals 2. Able to determine the correct dose for animals 3. Able to write good and correct recipes 4. Able to mix prescription drugs in the form of pulvis, pulveres, pills, capsules, ointments, suppositories, suspension and emulsion solutions, and galenic

	5. Able to write appropriate and correct prescriptions for a case of disease, at least 10 prescriptions
Evaluation Form /Assessment	1. Project Based Method: 50% 2. Case Study: 50%
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	1. Plumbs Veterinary Drug Handbook 6th Edition 2. Plumbs Veterinary Drug Handbook 7th Edition 3. Exotic Animal Formulary 5th 4. Saunders Handbook of Veterinary Drugs 3rd Edition 5. The Physiological Basis of Veterinary Clinical Pharmacology 6. Comparativa and Veterinary Pharmacology Comparativa and Veterinary Pharmacology

MODULE 11

Module Name	Veterinary Ethics Internship
Code	PDH70003
Study Program	Professional Education of Veterinary Medicine
Person Responsible For This Module	drh. Fajar Shodiq Permata, M.Biotech
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching format	Internship (Project Based) Internship (Case Based)
Workload	50 minutes of lecture class 60 minutes of case study 60 minutes of self study
ECTS	1,8
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 1 SCU = 1 x 1,8 ECTS = 1,8 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Understanding the veterinary code of ethics 2. Student able to collaborate with peers/colleagues 3. Student able to protect the veterinary profession
Module Descriptions	Veterinary ethics is the implementation of the veterinary code of ethics applied during the series of Internships in the Veterinary Professional Programme. This implementation includes conducting diagnoses and therapies lege artis, collaborating with peers as colleagues, and providing mutual professional protection assistance among colleagues.
Learning Contents	1. Veterinary Code of Ethics 2. Veterinary Communication 3. Legislation related to Veterinary Authorities
Evaluation Form /Assessment	1. Case Study 50% 2. Project Based Method 50%

Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	1. Veterinary Code of Ethics 2. Veterinary Communication 3. Legislation of Veterinary Authorities 4. Veterinary Leadership

MODULE 12

Module Name	Molecular Analysis Internship
Code	70021
Study Program	Professional Education of Veterinary Medicine
Person Responsible For This Module	drh. Yudit Oktanella, M.Si.
Language	Indonesian
Type of Course (Compulsory/Elective)	Elective
Learning Forms/Teaching format	1. Discussion 2. Lecture 3. Laboratory Work
Workload	100 minutes of lecture class 120 minutes of case study 120 minutes of self study
ECTS	3,6
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 2 SCU = 2 x 1,8 ECTS = 3,6 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Proficiency in basic laboratory techniques includes mastering basic lab instruments and equipment, understanding reagent and waste handling procedures, and calibrating methods. 2. Explaining and mastering sampling techniques and the preparation of various types of samples for molecular analysis 3. Understanding the basic principles and methods of protein and DNA analysis tests, as well as ELISA, and interpreting the results of protein and DNA testing and ELISA 4. Decisive the molecular diagnostic support techniques by understanding their basic principles to aid in confirming disease diagnosis

	5. Student able to analyze, identify, and read the interpretation of molecular examination results to support the accuracy of disease diagnosis
Module Descriptions	Molecular Analysis Internship activities equip students with competencies to understand and master molecular testing techniques to support disease diagnosis, including: (1) basic laboratory techniques such as: sterilization of equipment, micro pipetting, micro centrifuging, temperature handling, reagent introduction, calibration of measuring instruments for testing, and sample handling methods; (2) molecular analysis techniques: (i) DNA (principles of DNA extraction, isolation, and purification, enzymes and reagents needed for DNA extraction, isolation, and purification, PCR (basic principles, applications, PCR-based analysis (RAPD, SSR, AFLP, ARDRA, ISR), DNA electrophoresis, (ii) protein (including: basic principles of protein isolation, purification, and characterization), PAGE electrophoresis); (3) disease diagnosis using ELISA methods; (4) DNA and/or protein data analysis using offline and online software with a bioinformatics approach. Proficiency in testing techniques with a molecular approach is expected to enhance the competencies of internship students in the field of molecular disease diagnosis.
Learning Contents	1. Introduction: briefing on basic laboratory techniques, introduction to testing equipment and reagents, reagent and waste handling procedures 2. Introduction to samples, preparation methods for liquid and solid samples for various analytical purposes 3. Disease diagnosis using ELISA methods 4. Molecular analysis techniques 1: Protein 5. Molecular analysis techniques 2: DNA 6. Horizontal SDS PAGE electrophoresis 7. Vertical SDS PAGE electrophoresis 8. Interpretation of electrophoresis examination results using Gel Documentation 9. Introduction to bioinformatics for molecular auxiliary examination interpretation 10. Group case study presentations
Evaluation Form /Assessment	1. Quiz 10% 2. Final Internship Exam 15% 3. Internship Report 15% 4. Case Study/Project Based Method 40% 5. Laboratory Activities 20%

Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	1. Buku Pedoman PPDH 2. Yuwono, T., 2006, Biologi Molekuler, Penerbit Erlangga, Jakarta. 3. Susanto, H., Listyorini, D., Winaris, N., Kartikasari, N., Prananingrum, P., Anggorowati, D., and Kharisma,V.D 2018. *Teknik Analisis Molekular: Genetik*. UM Press 4. Baxevanis, A.D., and Ouelette, B.F.F. 2001. *Bioinformatics: A Practical Guide to The Analysis of Genes and Proteins*. NY, USA. John Wiley & Sons, Inc 5. Victori, V. & Sembiring, L. 2015. *Bioinformatika* 6. Aulanni'am. *Protein dan Analisisnya*. 2005. Citra Mentari Grup. Malang. 7. Modul Analisa Molekuler untuk Mahasiswa Pendidikan Profesi Dokter Hewan 8. Petunjuk Rotasi Analisa Molekuler

MODULE 13

Module Name	Food Processing Industry of Animal Origin Internship
Course Code	PDH70022
Study Program	Professional Education of Veterinary Medicine
Person Responsible for This Module	drh. Citra Sari, M.Si
Language	Indonesian
Type of Course (Compulsory/Elective)	Elective
Learning Forms/Teaching format	1. Discussion 2. Lecture 3. Project Based Learning 4. Case Study 5. Laboratory Work
Workload	100 minutes of lecture class 100 minutes of case study 120 minutes of self study
ECTS	3,6
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 2 SCU = 2 x 1,8 ECTS = 3,6 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Understand the requirements for ensuring hygiene and sanitation of animal products in the industry 2. Understand the production and distribution process of animal products in industry 3. Understand the requirements for halal assurance of animal products in the industry 4. Capable of implementing hygiene and sanitation guarantees based on HACCP, SNI, and ISO 22000
Module Descriptions	This course explains the guarantee of hygiene and sanitation as well as halalness in the production and distribution process of animal products.
Learning Contents	1. Description of animal products

	2. Identify hazards in animal products 3. Food safety quality assurance system of animal origin, including NKV, CODEX, and ISO 22000 4. Implementation of HACCP on animal products 5. Halal guarantee system for animal products 6. Animal product distribution system/chain, including requirements for distribution of animal products
Evaluation Form /Assessment	1. Project Based Method: 50% 2. Case Study: 50%
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	1. Modern Food Microbiology, 7th Ed - Springer 2005 2. Microbiology handbook Dairy Product, Edited by Rhea Fernandes, 2008 3. Food Safety Control in Poultry Industry, 2005, Woodhead Publishing Limited 4. Ilmu Daging RA Lawrie 5. FAO Animal Production and Health 6. FAO Food Hygiene 7. Permentan Nomor 14 Tahun 2018 tentang Pengawasan dan Pengujian Keamanan dan Produk Hewan 8. HACCP And ISO 22000 9. SNI

MODULE 14

Module Name	Poultry Industry Internship
Code	PDH 70023
Study Program	Professional Education of Veterinary Medicine
Person Responsible For This Module	drh. Dodik Prasetyo, M.Vet
Language	Indonesian
Type of Course (Compulsory/Elective)	Elective
Learning Forms/Teaching format	1. Field Clinical Practice
Workload	100 minutes of lecture class 120 minutes of case study 120 minutes of self study
ECTS	3,6
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 2 SCU = 2 x 1,8 ECTS = 3,6 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Explaining the scope of the poultry industry [upstream (breeding) / downstream (hatchery) / supporting (feed mill/OVK)] 2. Students are competent in the veterinary medical field (understanding poultry diseases, diagnostic and treatment techniques, and/or quality control aspects) to maintain product quality. 3. Students are capable of identifying influencing factors (supporting and inhibiting) in the poultry industry 4. Explaining the operations, production processes, distribution, and control of non-compliant products (waste, rejected products, etc.) as well as the roles and functions of veterinarians in the poultry industry
Module Descriptions	Internship activities carried out in the poultry industry include company operations, production processes, distribution, control

	of non-compliant products, and identifying influencing factors in the industry, as well as understanding the roles and functions of veterinarians in all processes related to veterinary medical authority.
Learning Contents	1. Development of the poultry industry and/or company profile 2. Overview of poultry diseases, diagnostic techniques, and therapy 3. Operational processes, production, distribution, and control of non-compliant products (waste, rejected products, etc.) 4. Identification of factors influencing the poultry industry
Evaluation Form /Assessment	1. Project Based Method 50% 2. Case Study 50%
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	1. Diseases of Poultry, 12th Edition. YM Saif *et al*. Blackwell Publishing. 2008 2. Poultry Genetic, Breeding and Biotechnology. WM Muir and SE Aggrey. Cabi Publishing. 2003 3. Disease of Poultry : Colour Atlas, 1st Edition. Ivan Dinev. Ceva Sante Animal. 2007 4. Nutrisi dan Pakan Unggas Kontekstual. Wahyu Widodo. 2005 5. Menyesuaikan jenis lokasi rotasi perunggasan (hulu/hilir/penunjang) dan sesuai arahan pembimbing lapang 6. UU no 18 tahun 2009 juncto UU no 41 tahun 2014 7. Peraturan Menteri Pertanian nomor 28/Permentan/OT.140/5/2008 8. Peraturan Menteri Pertanian nomor 50/Permentan/OT.140/10/2006 9. Peraturan Menteri Pertanian nomor 61/Permentan/PK.230/12/2016

MODULE 15

Module Name	Aquaculture Health Internship
Course Code	PDH70024
Study Program	Professional Education of Veterinary Medicine
Person Responsible for This Module	drh. Reza Yesica, M.Sc
Language	Indonesian
Type of Course (Compulsory/Elective)	Elective
Learning Forms/Teaching format	1. Discussion 2. Lecture 3. Case Study 4. Laboratory Work
Workload	150 minutes of lecture class 180 minutes of case study 180 minutes of self study
ECTS	5,4
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 3 SCU = 3 x 1,8 ECTS = 5,4 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Able to explain the laws and regulations surrounding fisheries which are the responsibility of the veterinarian 2. Able to explain physiology, anatomy, pathology in brackish water and fresh water fish 3. Able to explain strategic diseases caused by Parasites, Viruses and Bacteria in brackish water and fresh water fish 4. Able to explain herbal medicine methods for fish 5. Students are capable of implementing the health management of aquaculture fish, which is the domain of veterinarians 6. Students are capable of implementing nutritional management for aquaculture fish

	7. Able to explain methods of managing and utilizing fish resources and the environment in one fisheries business system
Module Descriptions	Referring to Law of the Republic of Indonesia No. 45 of 2009 concerning amendments to Law No. 31 of 2004 About Fisheries 1. Article 1 number 1 Fisheries are all activities related to the management and utilization of fish resources and their environment starting from pre-production, production, processing to marketing which are carried out in a fisheries business system. 2. Article 1 number 4 Fish are all types of organisms whose whole or part of their life cycle is in the aquatic environment. 3. Article 1 point 6 Fish aquaculture is an activity to maintain, raise and/or breed fish and harvest the results in a controlled environment, including activities that use ships to load, transport, store, cool, handle, process and/or preserve them. Internship of Aquaculture Fish Health electives in the Veterinary Professional Program which studies animal health and animal welfare in the scope of fisheries which is the domain of veterinarians
Learning Contents	1. Capable of explaining the laws and regulations surrounding fisheries, which are the responsibility of the veterinarian. 2. Capable of explaining the physiology, anatomy, and pathology of brackish and freshwater fish 3. Capable of explaining strategic diseases caused by parasites, viruses, and bacteria in brackish water and fresh water fishable 4. Capable of explaining herbal medicine methods for fish 5. Capable of performing health management on aquaculture fish, which is the domain of veterinarians 6. Competent to handle the nutritional management of aquaculture fish 7. Capable of explaining methods of managing and utilizing fish resources and the environment in one fisheries business system
Evaluation Form /Assessment	1. Project Based Method: 50% 2. Case Study: 50%
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.

Reading list/Book References	1. UU Republik Indonesia No. 31 Tahun 2004 Tentang Perikanan 2. UU Republik Indonesia No. 45 Tahun 2009 Tentang Perubahan atas UU No.31 Tahun 2004 Tentang Perikanan 3. UU Republik Indonesia No. 21 Tahun 2019 Tentang Karantina Hewan, Ikan dan Tumbuhan 4. UU Republik Indonesia No.18 Tahun 2012 Tentang pangan 5. Marine Parasitology. Klaus rohde, 2005 6. Fish Diseases and Medicine, Stephen A. Smith, 2019 7. Fish Pathology, Ronald J. Robert, 2012, Health Maintenance and Principal Microbial Diseases of Cultured Fishes, John A. Plumb and Larry A. Hanson, 2011 8. Nutrisi Ikan, Hany Handajani, S.Pi., M. Si, 2010 9. Penyakit Akuatik. Andri kurniawan, S.pi., MP. 2012 10. Penyakit Pada Hewan Vertebrata dan Invertebrata Air, Maftuch, Dahliatul Qosimah, 2019

MODULE 16

Module Name	Wildlife and Aquatic Conservation Internship
Course Code	PDH70025
Study Program	Professional Education of Veterinary Medicine
Person Responsible for This Module	drh. Nofan Rickyawan, M.Sc.
Language	Indonesian
Type of Course (Compulsory/Elective)	Elective
Learning Forms/Teaching format	1. Discussion 2. Lecture 3. Case Study 4. Laboratory Work 5. Small Group Discussion
Workload	100 minutes of face to face learning 120 minutes of case study 120 minutes of self study
ECTS	3,6
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 2 SCU = 2 x 1,8 ECTS = 3,6 ECTS
Prerequisite Courses	Students have graduated from the Bachelor of Veterinary Medicine Study Program
Module Objectives/Intended Learning Outcomes	1. Demonstrate various procedures related to medical procedures such as anaesthesia, moving, weighing, general check-ups both preventive and curative in nature for wild animals 2. Practicing diagnostic techniques on wild and aquatic animals 3. Practicing medical techniques on wild and aquatic animals 4. Explains the management of wild and aquatic animal food management 5. Explain the management of wild and aquatic animal enclosures

	6. Explain quarantine management for wild and aquatic animals 7. Explain biosecurity management in conservation institutions 8. Demonstrate procedures for dying wildlife and aquatic animals
Module Descriptions	This internship provides knowledge, understanding, and direct practice for PEVM students in the world of wild and aquatic animals at conservation institutions (LK). Implementation will be carried out in conservation institutions where the role of veterinarians is conservation medicine and other roles, both medical and non-medical, in managing wild and aquatic animals. Students will take part in all series from veterinarians and medical teams to understand and are expected to be able to practice diagnostic techniques, treatment, other medical procedures, food management, housing, quarantine, biosecurity, and management of wild and aquatic animals that experience death.
Learning Contents	1. Duties, functions, roles and responsibilities of veterinarians as conservation medicine 2. Health management in conservation institutions 3. Enclosure management in conservation institutions 4. Food management for wild animals in conservation institutions 5. Management of wildlife care in clinics and hospitals, quarantine and special conditions (pediatric and geriatric) in conservation institutions 6. Biosecurity management in conservation institutions 7. Procedures for handling wild and aquatic animals that experience death
Evaluation Form /Assessment	1. Case Study: 50% 2. Project Based Method: 50%
Study and examination requirements	1. This internship requires 100% attendance for the examination. 2. This internship requires taking an examination as a graduation requirement.
Reading list/Book References	1. Zoo and Wild Animal Medicine 1st Edition 2. Zoo and Wild Animal Medicine 2nd Edition 3. Zoo and Wild Animal Medicine 3rd Edition 4. Zoo and Wild Animal Medicine 4th Edition 5. Zoo and Wild Animal Medicine 5th Edition 6. Zoo and Wild Animal Medicine 6th Edition 7. Zoo and Wild Animal Medicine 7th Edition 8. Zoo and Wild Animal Medicine 8th Edition

	9. Zoo and Wild Animal Medicine 9th Edition 10. IUCN Guideline 11. Carpenter JW. Exotic Animal Formulary-eBook. Elsevier Health Sciences, 2012. 12. Plumb DC. Plumb's veterinary drug handbook. 2008. 13. Peraturan Nasional Tentang Konservasi Satwa Liar 14. IUCN Red List

MODULE 17

Module Name	Veterinary Professional Final Project
Course Code	
Study Program	Professional Education of Veterinary Medicine
Person Responsible for This Module	drh. Nofan Rickyawan, M.Sc.
Language	Indonesian
Type of Course (Compulsory/Elective)	Compulsory
Learning Forms/Teaching format	1. Discussion 2. Lecture 3. Case Study 4. Laboratory Work 5. Small Group Discussion
Workload	50 minutes of face to face learning 60 minutes of case study 60 minutes of self study
ECTS	1,8
Credit Units	NOTE : 1 SKS = 1 system credit unit (SCU) equal to 45 hours according to SNPT 2023 1 ECTS according to UB Rector decree No. 9/2023 equal with 25-30 hours 1 ECTS = 25 hours Therefore 1 SCU = 45 hours/25 hours = 1,8 ECTS ECTS calculation for this course : 1 SCU = 1 x 1,8 ECTS = 1,8 ECTS
Prerequisite Courses	Students are required to have completed all of their professional internships in the PEVM
Module Objectives/Intended Learning Outcomes	1. Capable of formulating and providing alternative problem-solving designs through promotional, preventive, curative, or rehabilitative actions 2. Capable of mastering theoretical concepts in the field of veterinary knowledge and other fields related to the main issues focused on in the final assignment 3. Capable of developing or designing scientific activities by referring to scientific literature and arranging them systematically. 4. Capable of providing guidance independently or in groups in selecting alternative solutions to conclusions based on the results of analysis and interpretation of the data obtained.

	5. Students are able to prepare the final assignment manuscript in writing properly and correctly in accordance with the applicable rules and guidelines for preparing final assignment work for the undergraduate program. 6. Capable of communicating in verbal form the final assignment plan and the results of the final assignment 7. Capable of completing the final assignment with full responsibility and paying attention to the ethics of writing scientific papers.
Module Descriptions	In this course, students compose a written scientific work that represents the student's critical thinking, analysis, and synthesis of a phenomenon or problem by paying attention to developments in science, technology, and art from the perspective of the scope of the veterinary science field using data from activities such as a literature review, research, apprenticeship, and/or independent/entrepreneurial production practice, innovation, or other forms of activity determined to be commensurate.
Learning Contents	1. Determine the title, objectives, problem formulation, and hypothesis 2. Script writing method 3. Analysis and interpretation of data 4. Discussion of analysis results and data interpretation 5. Decision making and writing 6. draw conclusions 7. Preparation of final assignment manuscripts Seminar results and comprehensive exams
Evaluation Form /Assessment	1. Presentation 2. Mastery of learning material 3. Report writing
Study and examination requirements	1. Students are required to have completed all of their professional internships in the PEVM 2. Students require taking an exam as a graduation requirement
Reading list/Book References	