

KSH 316 Management of Wildlife Feed and Health

Credit	:	3(2-3)
Semester	:	6 (even)
Course format	:	Lectures and discussion, reading assignment, course practice. 100 minutes per week. 14 weeks.
Pre-requisite	:	-
Lecturers	:	1. Dr. Erna Suzanna, MScF (Course coordinator) 2. Mrs. Lin Nuriah Ginoga, MSi. 3. Dr. Burhanuddin Mas'ud, MS

Course Description

This course describe in general two important aspects of wildlife conservation management both in-situ (natural) and ex-situ (artificial), *i.e.*, feed management and wildlife health management. Wildlife feed management include discussion on topics such as basics of wildlife nutrition, wildlife feed requirements analysis and preferences, feed formulation technique and wildlife feed processing and wildlife feed vegetation management. Wildlife health management include topics such as wildlife health care, introduction to wildlife diseases including symptoms, causes, prevention and management, and introduction to research on wildlife feed and health management.

Course Objectives

This objective of this course is to provide students with knowledge, understanding and application of wildlife feed and health management in natural and artificial habitats.

Learning Outcomes

1. General learning outcomes

Upon successful completion of this course the students will be able to:

- a. Recognize, understand and apply wildlife feed management aspects
- b. Recognize, understand and apply wildlife health management aspects

2. Specific learning outcomes

Upon successful completion of this course the students will be able to:

1. Explain wildlife classification based on feed types, metabolism process and food nutrients classification
2. Explain wildlife conventional and non-conventional feed materials
3. Explain feed consumption, requirements and palatability
4. Count feed requirements and formulation
5. Explain feed vegetation management and design feed greeneries garden
6. Explain wildlife health care principles and disease prevention steps
7. Explain causes and symptoms of bacterial diseases (TBC, Anthrax etc) that can attack wildlife
8. Explain causes and symptoms of viral diseases (Rabies, AIDS, avian influenza, flu babi, etc) that can attack wildlife
9. Explain causes and symptoms of parasitic diseases that can attack wildlife
10. Explain causes and symptoms of metabolism diseases on wildlife
11. Explain causes and symptoms of reproduction diseases on wildlife
12. Explain aspects that can be use as bases for doing research on wildlife feed and health management

Structure of Course Delivery

1. Lectures.
1. Reading assignments
2. Practice and demonstration

Major References

1. Anggorodi R. 1979. Ilmu Makanan Ternak. PT Gramedia. Jakarta.
2. Mc Donald, P., Edwards, R.A. and Greenhalgh, J.F.D.. 1980. Animal Nutrition. 4 th. John Wiley and sons, Inc
3. Calnek, B.W et al. 1991. Disease of Poultry. Iowa State University Press.
4. Fowler, M.E. 1991. Zoo and Wild Animal Medicine. WB Saunders Co. Toronto.
5. Klos, H.G and Lang, E.M. 1982. Handbook of Zoo Medicine. Van Nostrand Reinhold Co. New York.

Teaching Material Support

The choice of media and type of technology use include:

1. Face-to-face contact.
2. Printed power point presentation. Lectures notes in form of printed out power point presentation are available for each topic.
3. Additional references will be distributed or highlighted in class to supplement lecture materials. It is recommended that students supplement the lecture notes by reading related textbooks and other forms of related materials.
4. Computer
5. Projector Infocus
6. Whiteboard

Course Outline

Topics	Sub-topics	Bloom's Taxonomy	Week
Introduction	<ol style="list-style-type: none"> 1. Meaning: wildlife feed, wildlife health, feed and health management 2. General principles of wildlife feed and health management 3. Functions of feed and health for wildlife's survival 	C1, C2	1
Basics of wildlife nutrition science	<ol style="list-style-type: none"> 1. Wildlife classification based on feed types and digestive system 2. Digestion and metabolism 3. Food nutrients classification 	C1, C2	2
Analysis of wildlife requirements & feed preferences	<ol style="list-style-type: none"> 1. Wildlife feed requirement categories 2. Factors effecting wildlife requirements 3. Determination of wildlife feed requirements. 4. Determination of preferential level/index of feed palatability on wildlife. 	C1, C2	3 & 4
Techniques for wildlife feed formulation and feed processing	<ol style="list-style-type: none"> 1. Basics of feed formulation. 2. Feed formulation techniques 	C1, C2, C3	5 & 6
Wildlife feed vegetation management	<ol style="list-style-type: none"> 1. Types of feed vegetation 2. Development of greeneries garden 	C1, C2	7
Wildlife health care	<ol style="list-style-type: none"> 1. Principles of wildlife health care 2. Scope of wildlife health care 3. Steps in wildlife disease prevention 	C1, C2	8
Disease category, symptoms and causes of bacterial diseases and their management	<ol style="list-style-type: none"> 1. Disease grouping on wildlife 2. Symptom and causes of bacterial diseases 3. Management of bacterial disease 	C1, C2	9
Category of zoonosis disease caused by virus and their management	<ol style="list-style-type: none"> 1. Symptoms and causes of viral diseases 2. Management of viral diseases 	C1, C2	10
Symptoms and causes of parasitic diseases and management	<ol style="list-style-type: none"> 1. Symptoms and causes of parasitic diseases 2. Management of parasitic diseases 	C1, C2	11
Metabolism and	<ol style="list-style-type: none"> 1. Metabolism diseases 	C1, C2	12

Topics	Sub-topics	Bloom's Taxonomy	Week
reproduction diseases and their management	2. Reproduction diseases 3. Management of metabolism and reproduction diseases		
Introduction to wildlife feed diseases research	1. Introduction to wildlife feed research 2. Introduction to wildlife disease research	C3	13

Potential Course Overlap

Minimum overlapping will occur with similar topics offered in other courses such as Wildlife Captive Breeding (KSH 332).

Evaluation and Grading

1. Quizzes

Quizzes will be given every two weeks in the form of 1-2 short essay questions will be given to provide the students feedbacks on their course performance. The quiz will cover a topic discussed in the previous lecture. The quiz will be held approximately \pm 10 minutes.

2. Mid-term examination

Mid-term examination will be held during examination period scheduled by Registrar's office (after 7 weeks lecture) and will cover course topics delivered in week 1-7. Exam is composed of 10 true-false questions, 10 multiple choice and 5 essays. Total duration of exam is 120 minutes.

3. Final examination

Mid-term examination will be held during examination period scheduled by Registrar's office (after 14 weeks lecture) and will cover course topics delivered in week 8-14. Exam is composed of 10 true-false questions, 10 multiple choice and 5 essays. Total duration of exam is 120 minutes.

4. Assigned Paper

Each student is required to submit 8 assigned reports from course practice. The paper is graded based on IPB writing format.

Composition of grading are as follows:

Assessment Tools	Maximum Score	% of Grade
Quizzes	100	5

Assessment Tools	Maximum Score	% of Grade
Mid-term Examination	100	35
Final Examination	100	35
Assigned Paper	100	25

Final grade classification: A (≥ 75); B (65 – 74); C (55 – 64); D (≤ 54)

**Coverage of DFORCE Core Competence
in Management of Wildlife Feed and Health (KSH 316)**

Code : KSH 316

Course : Management of Wildlife Feed and Health

Credit : 3(2-3)

Code	Core Competencies	Course Content Covered	Cognitive Level	Topic
I	Students will be able to understand about wildlife feed and health within the frame of wildlife insitu and exsitu conservation.	Meaning: wildlife feed, health, feed management, health management	C1, C2	Introduction
		Stress mechanism on wildlife		
		Functions of feed and health for wildlife's survival		
II	Students will be able to understand the basics of wildlife nutrition science.	Wildlife classification based on feed types and digestion system	C1, C2	Basics of wildlife nutrition science
		Digestion and metabolism		
		Food nutrients classification		
III	Students will be able to understand how to analyze feed requirements, preferential level and feed palatability	Wildlife feed requirement categories	C1, C2	Analysis of wildlife requirements & feed preference
		Factors effecting wildlife requirements		
		Determination of wildlife feed requirements		
		Determination of preferential level/index of wildlife feed palatability		
IV	Students will be able to understand how to formulate and process artificial wildlife feed	Basics of feed formulation	C1, C2, C3	Technique for wildlife feed formulation and processing
		Feed formulation techniques		
V	Students will be able to understand how to manage feed vegetation and greeneries garden	Types of feed vegetation	C1, C2	Wildlife feed vegetation management
		Development of greeneries garden		

Code	Core Competencies	Course Content Covered	Cognitive Level	Topic
VI	Students will be able to understand how to manage feed vegetation and greeneries garden	Principles of wildlife health care Scope of wildlife health care Steps in wildlife disease prevention	C1, C2	Wildlife health care
VII	Students will be able to understand wildlife health care principles and wildlife disease prevention	Disease grouping on wildlife Symptom and causes of bacterial diseases Management of bacterial disease	C1, C2	Disease category, symptoms and causes of bacterial diseases and their management
VIII	Students will be able to understand groupings of diseases and bacterial disease and their management	Symptoms and causes of viral diseases Management of viral diseases	C1, C2	Category of zoonosis disease caused by virus and their management
IX	Students will be able to understand viral diseases on wildlife.	Symptoms and causes of parasitic diseases Management of parasitic diseases	C1, C2	Symptoms and causes of parasitic diseases and management
X	Students will be able to understand metabolism and reproduction diseases	Metabolism disease Reproduction diseases Management of metabolism and reproduction diseases	C1, C2	Metabolism and reproduction diseases and their management
XI	Students will be able to understand various research on wildlife feed and diseases	Introduction to wildlife feed research Introduction to wildlife disease research	C3	Introduction to wildlife feed diseases research

**Assessment Tools to Measure the Achievement of
Learning Outcomes in Management of Wildlife Feed and Health (KSH 316)**

Code : KSH 316

Course : Management of Wildlife Feed and Health

Credit : 3(2-3)

Code	Core Competencies	Learning Outcome	Bloom's Taxonomy	Assessment Tool(s)	Learning Activities
I	Students will be able to understand about wildlife feed and health within the frame of wildlife in-situ and ex-situ conservation.	Students will be able to explain about wildlife feed and health within the frame of wildlife in-situ and ex-situ conservation.	C1, C2	Written examinations at different cognitive level (mid-term exam).	Classroom lecture and discussion
II	Students will be able to understand the basics of wildlife nutrition science.	Students will be able to explain the basics of wildlife nutrition science.	C1, C2	Written examinations at different cognitive level (mid-term exam).	Classroom lecture and discussion
III	Students will be able to understand how to analyze feed requirements, preferential level and feed palatability	Students will be able to explain how to analyze feed requirements, preferential level and feed palatability	C1, C2	Written examinations at different cognitive level (mid-term exam).	<ul style="list-style-type: none"> • Classroom lecture and discussion • Practice • Demonstration
IV	Students will be able to understand how to formulate and process artificial wildlife feed	Students will be able to explain how to formulate and process artificial wildlife feed	C1, C2, C3	Written examinations at different cognitive level (mid-term exam).	<ul style="list-style-type: none"> • Classroom lecture and discussion • Practice • Demonstration
V	Students will be able to understand how to manage feed vegetation and greeneries garden	Students will be able to explain how to manage feed vegetation and greeneries garden	C1, C2	Written examinations at different cognitive level (mid-term exam).	<ul style="list-style-type: none"> • Classroom lecture and discussion • Practice • Demonstration
VI	Students will be able to understand wildlife health care principles and	Students will be able to explain wildlife health care principles and	C1, C2	Written examinations at different cognitive level (final exam).	<ul style="list-style-type: none"> • Classroom lecture and discussion • Practice

Code	Core Competencies	Learning Outcome	Bloom's Taxonomy	Assessment Tool(s)	Learning Activities
	wildlife disease prevention	wildlife disease prevention			<ul style="list-style-type: none"> • Demonstration
VII	Students will be able to understand groupings of diseases and bacterial disease and their management	Students will be able to explain groupings of diseases and bacterial disease and their management	C1, C2	Written examinations at different cognitive level (final exam).	<ul style="list-style-type: none"> • Classroom lecture and discussion • Practice • Demonstration
VIII	Students will be able to understand viral diseases on wildlife.	Students will be able to explain viral diseases on wildlife.	C1, C2	Written examinations at different cognitive level (final exam).	<ul style="list-style-type: none"> • Classroom lecture and discussion • Practice • Demonstration
IX	Students will be able to understand parasitic diseases on wildlife	Students will be able to explain parasitic diseases on wildlife	C1, C2	Written examinations at different cognitive level (final exam).	<ul style="list-style-type: none"> • Classroom lecture and discussion • Practice • Demonstration
X	Students will be able to understand metabolism and reproduction diseases	Students will be able to explain metabolism and reproduction diseases	C1, C2	Written examinations at different cognitive level (final exam).	<ul style="list-style-type: none"> • Classroom lecture and discussion • Practice • Demonstration
XI	Students will be able to understand various research on wildlife feed and diseases	Students will be able to explain various research on wildlife feed and diseases	C3	Written examinations at different cognitive level (final exam).	<ul style="list-style-type: none"> • Classroom lecture and discussion • Practice • Demonstration