COURSE SYLLABUS

Second Semester Academic Year 2016

1. **Faculty of** Veterinary Medicine Department of Physiology

2. **Course code** 01506341 **Course name** Nutritional Balance and Animal Disease Development
Total credits: 3(2-3-6)
Prerequisite: (course code and name) 01531313 Veterinary Gastrointestinal System
Section Day and Time: Thu 9:00-12:00, Fri 13:00-15:00
Room: Lecture 3

3. **Lecturer(s):** 1. Assist.Prof.Dr. Chanin Tirawattanawanich (C.T.)
& 2. Dr. M.L. Narudee Kashemsant (N.K.)
3. Attawit Kovitvadhi (A.K)
Assisting staff 1. Sommai Homsawad
2. Supaporn Booyaprasit
3. Nuch Pungphosop

4. **Office hours for consultation with students**
Day: Available upon appointment
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e-mail address: C.T. fvetcnt@ku.ac.th
N.K. fvetnka@ku.ac.th
A.K. fvetawk@ku.ac.th

5. **Course Objective(s)**
This course aims to deliver principle information and to make student understand the following key points:
5.1 Types, nutritional values, and toxic components of or contaminants in feedstuffs as well as methods used in feed analysis
5.2 Nutritional roles in animal health and production and problems caused by nutritional imbalance
5.3 Feed formulation and adjustment to fit the requirements of animal in particular physiological status
5.4 Agro-industrial processing technology for the better feed utilization to improve production performance in farm animals
5.5 Mechanisms in the development of diseases induced by nutritional imbalance; impact on production performance, diagnostic means and solving solutions to such health problems.

6. **Course Description**
Sources, values and significances of nutrients and feed additives; basic feed formulation and nutritional optimization according to physiological status; Mechanisms in the development of diseases caused by nutritional imbalance; Impacts, analysis, diagnosis and solving solutions to the health problems

7. **Course Outline**
7.1 Feedstuffs, Nutrients and Requirement

Basic in animal feeding
Feedstuffs: Classification, structural constituents and chemical components
Nutrient requirement
Animal feeding standard
Analysis of feed and bioavailability
Roughage: Types and nutritional value
Toxicants in feedstuffs and their impact
Feed additives

7.2 Nutrient metabolisms and feed formulation
Energy metabolism, requirement and utilization of dietary energy
Measurement of dietary energy and body utilization
Metabolism of dietary nitrogen compound and requirement
Protein-energy relationship
Vitamins: Classification, roles and abnormality related to various factors
Minerals: Classification, roles, abnormality related to various factors and diagnosis
Basic ration formulation and least-cost analysis

7.3 Nutritional management and abnormality caused by defect and/or deficiency
Nutritional management and diseases in poultry
Nutritional management and diseases in swine
Nutritional management and diseases in cattle
Nutritional management and diseases in dogs and cats

7.4 Clinical nutrition in patient with major organ dysfunctions and metabolic diseases
Clinical nutrition in hepatic failure
Clinical nutrition in chronic renal failure
Clinical nutrition in gastro-intestinal disorders
Clinical nutrition in diabetes
Clinical nutrition in obesity

8. **Student-centered Teaching Method(s)**

In-class lecture and discussion, grouped laboratory practice, field trip and reports

9. **Teaching Aids/Materials**

PowerPoint presentation slides, video-audio materials, handouts and fundamental feed analysis laboratory facilities

10. **Measure(s) of Achievement**

Experiment and reports		
- Lab experiment and reports		**10 %**
Examinations		
- Mid-term examination		**42 %**
Lecture	C.T.	34 %
	A.K.	8 %
- Final examination		**28 %**
Lecture	C.T.	16 %
	N.K.	12 %
- Clinical nutrition topics		**20 %**

11. **Grading**

Grading will be performed based on T-score.

12. **Textbook(s) and Readings** (in bibliography style)

ชนินทร์ ติรวัฒนวานิช (2550) เอกสารประกอบการสอนโภชนสมดุลและการเกิดโรคในสัตว์
สุนทรานี ทองใหญ่ (2543) โภชนสมดุลและการเกิดโรคในสัตว์
สุนทรานี ทองใหญ่ และ ศุภมาส โชติเมธีภิรมย์ (2548) ปฏิบัติการโภชนสมดุลและการเกิดโรคในสัตว์
Basu, T.K. & Dickerson, J.W. (1996). Vitamin in human health and disease. Cab International, UK.
Case, L.P., Carey, D.P., Hirakawa, D.A. & Daristotle, L. (2000) Canine and filine nutrition: A resource for companion animal professionals. Mosby, Inc., St. Louis, Missouri, USA.