

NUTRITION

Study programme: MIMV **Curricular Year:** 3rd **Semester:** 5th **Compulsory** **ECTS:** 4,5

Lecturers: Luis Ferreira, Rui Bessa (CCP, R), Susana Alves, Maria João Fradinho

1. Contact hours: Lectures – 26; Practical – 26

2. Objectives:

Students should be able to:

- Understand the mechanisms of transformation of energy and nutrients in animal products;
- Evaluate the nutritional needs of animals;
- Assess the nutritional quality of foods and learn to diagnose situations of nutritional deficiencies.

3. Programme:

Introduction: Importance of animal nutrition in the context of modern agriculture. Basics of animal nutrition. Current methods for analysis of foods and nutrients. Review of the anatomy and physiology of the gastrointestinal tract of domestic animals. Nutrients and metabolism: water, energy, protein and amino acids, carbohydrates, lipids, vitamins and minerals. Evaluation of the nutritional value of foods and the nutritional needs of animals. Digestibility of the feed. Energy and protein assessment. Nutritional requirements. Voluntary food intake. Feeding standards. Food processing. Feeding strategies. Sampling technique for food analysis. Determination of gross energy by adiabatic bomb. Proximate analysis of food. Forage evaluation by the method of Van Soest. "In vitro" digestibility measurement by the method of Tilley and Terry.

4. Bibliography:

Class handouts, lecture notes, scientific and technical papers.

- McDonald, P, Edwards, R.A., Greenhalgh, J.D.F., Morgan, C.A., Sinclair, L.A. & Wilkinson, R.G. Animal Nutrition. Prentice Hall. 7th Edition 2011.
- Pond, W.G., Church, D. B., Pond, K. R., Schoknecht, P. A. Basic Animal Nutrition and Feeding. Wiley, 5th Edition 2004.
- Case, L. P., Daristotle, L., Hayek., M. G., Raasch, M. F. 2011. Canine and Feline Nutrition: A Resource for Companion Animal Professionals. Elsevier, 3rd Edition 2011.

5. Assessment:

Theoretical and practical subjects are evaluated with a written examination that includes short answer questions, multiple-choice questions, true and false and incomplete sentences. Reports and presentations of practical work. The final grade includes 60% of the theoretical component and 40% of the practical component.