

### AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

| Course Title Energy Evaluating Systems                                   |  | of Feeds   |  |  |  |                          |                    |          |
|--|--|--|--|--|--|--------------------------|--------------------|----------|
| Course Code  | VHB652   |  | Couse Level  |  | Third Cycle (Doctorate Degree)           |                          |                    |          |
| ECTS Credit 10   | Workload   | 254 (Hours)  | Theory   | 2  | Practice                                 | 2                        | Laboratory         | 0        |
| Objectives of the Course Educate to masters who had mono gastric animals |  |  | ve sufficient l  | knowledge                                  | about the ene                            | ergy utilisatio          | n systems in rumir | nant and |
| Course Content   | Energy utilisa<br>Energy utilisa<br>Energy utilisa<br>Scientific and | tion systems f<br>tion systems f<br>tion systems f<br>technologic ir | or mono gast<br>or ruminant.<br>or determinat<br>nprovements | ric animals<br>tion of ener<br>related wit | s.<br>rgy level of fee<br>h veterinary s | eds for rumin<br>cience. | ant and poultry.   |          |
| Work Placement   | N/A  |  |  |  |  |                          |                    |          |
| Planned Learning Activities and Teaching Methods                         |  | Explanation  | (Presentat   | tion), Discussi                            | on, Individua                            | al Study                 |                    |          |
| Name of Lecturer(s)  |  |  |  |  |  |                          |                    |          |

#### **Assessment Methods and Criteria**

| Midterm Examination | 1 | 30 |  |
|---------------------|---|----|--|
|                     |   |    |  |
| Final Examination   | 1 | 60 |  |
| Assignment          | 4 | 10 |  |

# **Recommended or Required Reading**

| 1 | Givens, D.I., De Boever, J.L. and Deaville, E.R. (1997). The principles, practices and some future applications of near infrared spectroscopy for predicting the nutritive value of foods for animals and humans. Nutr. Res. Rev., 10: 83-114. |
|---|--|
| 2 | Kellerns, R.O., Church, D.C. (2002) Livestock Feeds and Feeding, Prentice Hall, New Jersey.  |
| 3 | McDonald, P., Edwards, R.A., Greenhalgh, J.F.D., Morgan, C.A. (2002) Animal Nutrition, Longman Scientific & Tecnical, England.   |
| 4 | Pond, W.G., Church, D.C., Pond, K.R., Schoknecht, P.A. (2004) Basic Animal Nutrition and Feeding, John Wiley & Sons, New York.   |
| 5 | Ensminger, M.E., Oldfield, J.E., Heinemann, W.W. (1990). Feeds and Nutrition, Second Edition, The Ensminger Publishing Company, California, USA.   |

| Week | Weekly Detailed Course Contents |   |  |  |  |
|------|---------------------------------|---|--|--|--|
| 1    | Theoretical                     | Determination of energy and energy utilisation systems  |  |  |  |
| 2    | Theoretical                     | Steps of energy: Crude energy (CE), digestible energy (DE), metabolically energy (ME), net energy (NE)                    |  |  |  |
| 3    | Theoretical                     | Factors which can affecting utilisation of feed energy levels: Animal species   |  |  |  |
| 4    | Theoretical                     | Factors which can affecting utilisation of feed energy levels: degree of digestibility of feed                            |  |  |  |
| 5    | Theoretical                     | Factors which can affecting utilisation of feed energy levels: quality of protein   |  |  |  |
| 6    | Theoretical                     | Factors which can affecting utilisation of feed energy levels: feed additives which decrease of metan production          |  |  |  |
| 7    | Intermediate Exam               | Midterm exam  |  |  |  |
| 8    | Theoretical                     | Factors which can affecting utilisation of feed energy levels: feed intake  |  |  |  |
| 9    | Theoretical                     | Methods of energy utilisation systems for poultry-chemical methods  |  |  |  |
| 10   | Theoretical                     | Methods of energy utilisation systems for poultry-biologic methods  |  |  |  |
| 11   | Theoretical                     | Methods of energy utilisation systems for poultry-chemical methods  |  |  |  |
| 12   | Theoretical                     | Methods of energy utilisation systems for poultry-chemical methods  |  |  |  |
| 13   | Theoretical                     | Factors which affecting of heat: Quality of feed, balance of ration, some minerals (etc., Mg and P), frequency of feeding |  |  |  |
| 14   | Theoretical                     | Methods for energy determination of feeds   |  |  |  |
| 15   | Theoretical                     | Other methods for determination of feed quality   |  |  |  |
| 16   | Final Exam                      | Final exam  |  |  |  |



# **Workload Calculation**

| Activity                              | Quantity | Preparation | Duration | Total Workload |  |
|---------------------------------------|----------|-------------|----------|----------------|--|
| Lecture - Theory                      | 14       | 0           | 2        | 28             |  |
| Lecture - Practice                    | 15       | 0           | 2        | 30             |  |
| Assignment                            | 10       | 0           | 8        | 80             |  |
| Reading                               | 14       | 0           | 6        | 84             |  |
| Midterm Examination                   | 1        | 12          | 2        | 14             |  |
| Final Examination                     | 1        | 16          | 2        | 18             |  |
|                                       | 254      |             |          |                |  |
| [Total Workload (Hours) / 25*] = ECTS |          |             |          |                |  |

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

| 1 | To have sufficient knowledge about the energy utilisation systems for poultry.   |
|---|--|
| 2 | To have sufficient knowledge about the energy utilisation systems for ruminant.  |
| 3 | To have sufficient knowledge about the determination of energy level with protein utilisation systems for ruminant and poultry.  |
| 4 | Students will more easily adapted to new scientific and technologic improvements with a help of correct and recent knowledge education. They have ability to present correct solutions for problems. |
| 5 | Methods for energy determination of feeds  |

Programme Outcomes (Animal Nutrition and Nutritional Diseases (Veterinary Medicine) Doctorate)

| 1  | Knows information about importance of forage and concentrates in basic animal nutrition for protecting animal health in scientific and technological animal production.                  |
|----|--|
| 2  | Have ability to formulate economical and full-satisfactory rations with considering product quality and health. May inform animal producers about practical/appropriate feeding methods. |
| 3  | Can adapt to recent scientific and technological developments in animal nutrition easier and produce proper strategies against to problems on this field.                                |
| 4  | Knows the properties of feeds used in proper and economical rations formulated due to needs of animal species.   |
| 5  | Can give information to animal producers about properties of common feedstuffs used in Turkey  |
| 6  | Knows organoleptic, physical diagnostic and chemical analysis methods used in determining feed quality.  |
| 7  | Have information about processing and the effects of processing on animal yield.   |
| 8  | Can identify the term "feed hygiene" and have information about the usage availability of contaminated feedstuffs.   |
| 9  | Can apply the informations related to feed additives in a proper way.  |
| 10 | Understands the results and factors decreasing production.   |
| 11 | Knows the nutrition related diseases and their solution recommendations which may be applied in feeding or formulating feeds for preventing nutritional diseases.                        |
| 12 | Knows about the availability level of feedstuffs after consumed and can perform digestibility trials.  |
| 13 | Knows the definition of stress, stress sources and effects on health and production level of animals.  |
| 14 | Have sufficient information on classification, activation and fermentation of rumen microorganisms plus carbohydrate, lipid and protein digestibility.                                   |
| 15 | Knows the factors effecting feed intake and negative factors in feedstuffs and preventation of them.   |
| 16 | Comments on feeding behaviours and related yield parameters.   |
| 17 | Have information on basic terms related to feed legislation, feeds used in animal nutrition and their legal regulations.   |
| 18 | Have information about biotechnological research conducted on feeds and animal nutrition.  |
| 19 | Knows the effects of nutrition on food quality, fertility, immunity and parasite enfestations.   |
|    |  |

# Contribution of Learning Outcomes to Programme Outcomes 1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High

|     | L1 | L2 | L3 |  |
|-----|----|----|----|--|
| P12 | 5  | 5  | 5  |  |

