

## TECHNOLOGY OF ANIMAL PRODUCTS

Study Programme: MIMV Curricular Year: 5<sup>th</sup> Semester: 10<sup>th</sup> Compulsory Credits: 4.5 ECTS

Lecturer(s): António S. Barreto (CCP), Maria João Fraqueza (R), Marília C. Ferreira

### 1. Contact hours:

Lectures - 26h Practicals - 26h Total 56h

**2. Objectives:** The study and the knowledge of the operations and processes of food engineering. The study of the technological processes of transformation of animal origin products aims the preparation of students for future areas of work such as the Public Health or the collaboration with other professional areas of the food technology.

### 3. Programme:

**Theoretic** - An introduction to the study of meat and meat products. Meat consumption on EU and in world. Meat animals. Slaughterhouses equipment and by-products utilization. Maturation of meat. Development of organoleptic quality. Defect and decomposition of meat. Carcasses classification. Carcasses cut and classification of meat pieces. Refrigeration and freezer of carcasses and meat. Meat processing. By-products. An introduction to the study of poultry meat and poultry products. An introduction to the study of milk and dairy products. Milk consumption on EU and in world. Heat treatment of milk and distribution. Dairy technology: butter, fermented milks and ice-creams; condensed, evaporated and dry milk. Cheeses technology. By-products. An introduction to the study of fish and seafood. Fish processing. An introduction to the study of honey and wax.

**Practical** – Pork carcass deboning and meat cuts. Meat products technology. Milk and dairy technology: cream, butter, cheeses and yoghurt. Fish products technology. Establishment of a HACCP plan applied to a meat product. Quality and safety control of food.

### 4. Bibliography:

Alfa-Laval (1995). *Manual de Industrias Lacteas*. Ed Alfa - Laval.

Burgers, G.H.O. (1987). *El Pescado y las Industrias Derivados de la Pesca*. Ed Acribia, S.A. Zaragoza.

Mortimore, S. & Wallace, C. (2013). *HACCP: a Practical Approach*. Practical Approaches to Food Control and Food Quality Series. Springer, London, U.K.

Multon, J.L. (1992). *Additifs & Auxiliaires de Fabrication dans les Industries Agro-Alimentaires*. Ed. Technique & Documentation – Lavoisier, Paris, France.

Sprenger, R.A. (2012). *Hygiene for Management*. Highfield.co.uk Ltd; 16th edition, 436p.

Toldra, F. (2010). *Handbook of Meat Processing*. Edited by Fidel Toldra, Wiley-Blackwell. ISBN: 978-0-8138-2182-5, 584p.

Toldra, F. , Hui, Y. H., Astiasaran, I., Sebranek, J. & Talon, R. (2014). *Handbook of Fermented Meat and Poultry*. 2nd Edition. Edited by Fidel Toldra, Y. H., Hui, I. Astiasaran, J. Sebranek & R. Talon, Wiley-Blackwell. 528 pages.

### 5. Assessment:

The students' knowledge is evaluated weekly with little tests about practical topics and with a written final examination about theoretical subjects