

Code: 1705 Animal Buildings**Degree:** 1st cycle – Animal Production Engineering**Curricular Year:** 3rd**Semester Course:** 1st**Credits:** 6 ECTS**Compulsory****Language:** Portuguese/English**Responsible:** Jorge Ferro da Silva Meneses**Other lecturer(s):** -**Web Site:** <http://www.isa.utl.pt/home/node/3961>**1. Contact hours:****Lecture/Practicals 70 Others 14 Total 84****2. Objectives:**

To acquire basic knowledge on building materials and construction techniques. To study environmental control in livestock buildings in order to evaluate and design systems and equipment for ventilation, heating, cooling, and lighting. To analyse the main characteristics, lay-out and dimensioning of buildings for animal production, for milk production, and waste handling and storage, to allow its efficient management and design.

3. Programme:

Materials and building techniques for animal buildings: foundations, floors, walls and roofs. Environmental requirements for animal production. Environmental control: thermal insulation, thermal and mass balances, psychometric processes. Equipment and design of ventilation, heating, cooling and lighting systems. Farmstead planning, phases and documentation of for a building project. Characteristics, dimensioning and design of buildings and equipment for housing dairy cows, milking parlours, beef cattle, sheep and goats., pigs, horses, broilers and laying hens. Buildings and equipment to store silage and hay. Equipment and buildings to handle, store and treat animal waste.

4. Bibliography:**Main Bibliography**

Albright, L.D. 1990. Environmental Control for Animal and Plants. American Society of Agricultural Engineers, St. Joseph, Michigan, 453 p.

Carbó, C.B., Caballero, M.T. 2007. Vacuno de Leche de Alta Producción (V.L.A.P.). Sus Alojamientos e Instalaciones. Editorial Euroganadería, España, 254 p

ITP, 2000. Memento de l'Éleveur du Porc. Institut Technique du Porc, Paris, 374 p

Wathes, C.M., Charles, D.R. (edit.). 1994. Livestock Housing. CAB International, Cambridge, 428p

Other Bibliography

Carbó, C.B. (coord.), 1997. Monografía II. Alojamientos e Instalaciones (II). Ediciones Mundi-Prensa, Madrid, 344p.

CIGR 1999. CIGR Handbook of Agricultural Engineering, Vol. II, Animal Production & Aquacultural Engineering. American Society of Agricultural Engineers, St. Joseph, Michigan.

Meneses, J.F., 1993. Elementos para Instalações Agrícolas. Associação dos Estudantes de Agronomia, Lisboa.

MWPS, 1997. Livestock Waste Facilities Handbook. MidWest Plan Service, Iowa State University, Iowa.

5. Assessment:

Daily work and attendance to the classes and technical visits. Exemption tests or written final examination.

6. Estimated Workload:

168	Hours
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7. Last Update:

13/7/2010
