

## 60567 - Animal production systems

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 60567 - Animal production systems

**Faculty / School:** 201 - Escuela Politécnica Superior

**Degree:** 546 - Master in Agricultural Engineering

**ECTS:** 9.0

**Year:** 1

**Semester:** Second semester

**Subject Type:** Compulsory

**Module:** ---

### 1.General information

#### 1.1.Aims of the course

#### 1.2.Context and importance of this course in the degree

#### 1.3.Recommendations to take this course

### 2.Learning goals

#### 2.1.Competences

#### 2.2.Learning goals

#### 2.3.Importance of learning goals

### 3.Assessment (1st and 2nd call)

#### 3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

### 4.Methodology, learning tasks, syllabus and resources

#### 4.1.Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. It favors the learning of the main factors involved and influencing farming systems and production processes of alternative animal species, as well as those involved in the manufacture of compound feed.

Lectures are complemented with a set of practical activities that allow better understanding of the technologies and of the applicability of the acquired knowledge.

The preparation of a guided assignment help the students their teamwork ability and how to prepare and justify a report in the manufacture of compound feed.

For a better track of the learning process, students are encouraged to use tutorials through various systems and methods: conventional tutorials and more specific tutorials related to the assignment.

#### 4.2.Learning tasks

The course includes the following learning tasks:

- Lectures
- Tutorials for the formulation of a compound feed
- Computer practice sessions:
  - 1- compound feed formulation
  - 2- population growth formulas

- Lab sessions for the presentation and use of materials and equipment for beekeeping
- Visits (depending on budget availability) to farms and feed mill

### 4.3.Syllabus

The course will address the following topics:

#### Theory

##### Section 1: Introduction

- Topic 1- Systems, properties, factors that determine them. Efficiency systems
- Topic 2- Management of key functions. Technical management. Indexes and its importance

##### Section 2: Hygiene and Health

- Topic 3- General concepts of pathology, diseases. Zoonosis
- Topic 4- Hygiene and Health. Biosafety

##### Section 3: Production of fodder

- Topic 5- Situation of the compound feed industry sector. Basic legislation on animal feed. Types of feed
- Topic 6- Raw materials. Nutritional values and limits of use. Cereals and by-products, vegetable protein concentrates, fibrous foods, animal fats and oils and additives
- Topic 7- Production of fodder: Formulation. Processes: grinding, mixing, granulating, new technologies

##### Section 4: Organic production

- Topic 8- Organic production. Holistic system

##### Section 5: Aquaculture Production

- Topic 9- Introduction, water as a means of fish production
- Topic 10- Production systems and management of continental species
- Topic 11- Production systems and management of marine species

##### Section 6: Alternative Productions

- Topic 12- Production systems and management in beekeeping
- Topic 13- Production systems and management in heliculture
- Topic 14- Production systems and management in vermiculture

#### Practice

- Assignment for students with Winfeed
- Population growth formulas with Matlab
- Presentation and recognition of beekeeping equipment
- Visits: 1) Feed mill 2) Farms and fish farms

### 4.4.Course planning and calendar

Provisional course planning

Week	Classroom Activity	Autonomous work	Total
1	6	9	15
2	6	9	15
3	6	9	15
4	6	9	15
5	6	9	15
6	6	9	15
7	6	9	15
8	6	9	15

9	6	9	15
10	6	9	15
11	6	9	15
12	6	9	15
13	6	9	15
14	6	9	15
15	6	9	15
<b>Total hours</b>	90	135	225

#### 4.5. Bibliography and recommended resources

- BB** Angulo Asensio, Eduardo. Tecnología de fabricación de piensos / Eduardo Angulo Asensio y Francisco Puchal Mas . Lleida : Paperkite Editorial , D.L.1995
- BB** Fontanillas Pérez, Juan Carlos. El caracol y la heliocultura / J. C. Fontanillas Pérez, Isabel García-Cuenca Ariati . Madrid [etc.] : Mundi-Prensa, 2002
- BB** Genética, patología, higiene y residuos animales / coordinador y director Carlos Buxadé Carbó ; con la participación de 29 autores . Madrid [etc.] : Mundi-Prensa, 1995
- BB** Jean-Prost, Pierre. Apicultura : conocimiento de la abeja : manejo de la colmena / Pierre Jean-Prost, con la colaboración de Paul Medori . 3ª ed., rev. y ampl. / Enrique Asensio Sierra Madrid [etc.] : Mundi-Prensa, 1989
- BB** La gestión en la explotación ganadera / con la participación de 31 profesionales ; coordinador : Carlos Buxadé Carbó . Madrid [etc.] : Mundi-Prensa, 2003
- BB** Manual de microscopía de piensos + 1 CD / Roser Sala, Ana Cristina Barroeta, (coords.). Bellaterra, Barcelona : Universitat Autònoma de Barcelona, 2003
- BB** Padilla Alvarez, Francisco. Fundamentos de acuicultura / Francisco Padilla Alvarez . Córdoba : Servicio de Publicaciones, Universidad de Córdoba, 2009
- BB** Tablas FEDNA de composición y valor nutritivo de alimentos para la fabricación de piensos compuestos / [coordinada por] C. de Blas, G.G. Mateos y P.G. Rebollar ; en colaboración con G. Santomá, J. Méndez, R. Carabaño ; patrocinadas por Elanco Valquímica S.A. [y] Instituto Nacional de Investigación Tecnología Agraria y Alimentaria (INIA) . 3ª ed. [Madrid] : Fundación Española para el Desarrollo de la Nutrición Animal, 2010
- BC** Benedetti, Lorenzo. Apicultura : el individuo, la colectividad y el medio (...) / Lorenzo Benedetti. Lucilla Pieralli ; traducido y adaptado de la segunda edición italiana por Juan Vivanco . Barcelona : Omega, D.L. 1990
- BC** Butterfield, J. (2006). Holistic Management Handbook. Healthy Land, Healthy Profits. Island Press
- BC** Compendio de Robbins y Cotran : patología estructural y funcional / Richard N. Mitchell ... [et al.] ; ilustraciones de James A. Perkins ; [revisión científica, Lluís Colomo Saperas] . 8ª ed. Ámsterdam ; Barcelona ; Madrid [etc.] : Elsevier, cop. 2012
- BC** Ekarius, K. (1999). Small-scale livestock farming: a grass-based approach for health, sustainability, and profit versa press
- BC** Fellows, Peter. Tecnología del procesado de los alimentos : principios y prácticas / Peter Fellows ; traducido por Francisco Javier Sala Trepal . [1a. ed.] Zaragoza : Acribia, D.L. 1993
- BC** Fundación Española para el Desarrollo de la Nutrición Animal. leCurso de especialización (9.. Influencia del procesado sobre el valor nutritivo de materias primas y piensos terminados : IX Curso de especialización tecnología y nutrición : Barcelona, 8 y 9 de noviembre de 1993 / obra colectiva y coordinada por: Paloma García Rebollar ... [et al.]. [Barcelona?] : FEDNA, D.L. 1993

- BC** Kay, Ronald D.. Farm management : planning, control, and implementation / Ronald D. Kay . 2nd ed. New York [etc.] : McGraw-Hill Book Company, 1986
- BC** Patología médica veterinaria : libro de texto para la docencia de la asignatura / edición coordinada por : Luis Eusebio Fidalgo Alvarez ... (et al.]). León : Universidad de León ; Santiago : Universidad de Santiago de Compostela ; Zaragoza : Universidad de Zaragoza, 2003
- BC** Pérez Arellano, José Luis. Manual de patología general / José Luis Pérez Arellano . 7ª ed. Ámsterdam ; Barcelona ; Madrid [etc.] : Elsevier Masson , D. L. 2013
- BC** Wadsworth, J.. Análisis de sistemas de producción animal. Vol. 1, Las bases conceptuales / por J. Wadsworth . Roma : Organización de las Naciones Unidas para la Agricultura y la Alimentación, 1997

#### LISTADO DE URLs:

de Blas, C., Mateos, G.G., García-Rebollar, P. (2010). Tablas FEDNA de composición y valor nutritivo de alimentos para la piensos compuestos. Madrid: Fundación Española para el Desarrollo de la Nutrición Animal - [<http://www.fundacionfedna.org/ingredientes-para-piensos>]

Elfenbein, D.W., Fisman, R., McManus, B. (2011). Market structure, reputation, and the value of quality certification. Nation Economic Research - [<http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=B0BDA5AE09694005983798A8E84CB1F4?doi=10.1.1.402.848&r>]

Rebollar, P.G., Mateos, G.G., de Blas, C. (1993). Influencia del procesado sobre el valor nutritivo de materias primas y pien en IX Curso de especialización tecnología y nutrición. Barcelona: Fundación Española para el Desarrollo de la Nutrición An [[http://www.fundacionfedna.org/publicaciones\\_1993](http://www.fundacionfedna.org/publicaciones_1993)]

The updated recommended bibliography can be consulted in:

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=60567&Identificador=C70027>