



Universitat de Lleida

DEGREE CURRICULUM  
**INTEGRATED PRACTICE:  
ENGINEERING AND  
MANAGEMENT OF  
AGRICULTURAL PRODUCTION**

Coordination: CANTERO MARTINEZ, CARLOS

Academic year 2023-24

Subject's general information

<b>Subject name</b>	INTEGRATED PRACTICE: ENGINEERING AND MANAGEMENT OF AGRICULTURAL PRODUCTION			
<b>Code</b>	102540			
<b>Semester</b>	1st Q(SEMESTER) CONTINUED EVALUATION			
<b>Typology</b>	<b>Degree</b>	<b>Course</b>	<b>Character</b>	<b>Modality</b>
	Bachelor's Degree in Agricultural and Food Engineering	4	COMPULSORY	Attendance-based
<b>Course number of credits (ECTS)</b>	6			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRACAMP	PRAULA	TEORIA
	<b>Number of credits</b>	2.5	2.2	1.3
	<b>Number of groups</b>	1	1	1
<b>Coordination</b>	CANTERO MARTINEZ, CARLOS			
<b>Department</b>	ANIMAL SCIENCE			
<b>Teaching load distribution between lectures and independent student work</b>	Hores presencials: 60 Hores no presencials: 90			
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.			
<b>Language</b>	Català: 60% Castellà: 40%			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
ALTÉS GASPAR, VICTOR	victor.altés@udl.cat	1,2	
CANTERO MARTINEZ, CARLOS	carlos.cantero@udl.cat	1,8	
COTS RUBIO, LLUIS	lluis.cots@udl.cat	,6	
ESTRUCH BOSCH, ESTHER	esther.estruch@udl.cat	,6	
VILLALBA MATA, DANIEL	daniel.villalba@udl.cat	1,8	
VILLAR MIR, JOSEP MARIA	josepmaria.villar@udl.cat	0	

## Learning objectives

The student that approve this subject has to be able of do a global analysis of a agro-livestock farm that integrates the plant and animal components , taking into account the physical, economic and environmental aspects.

## Competences

### General competences

Ability to prepare and write agricultural studies and projects, rural development and environmental impact studies for agricultural and livestock production.

### Specific competences

Knowledge and use of plant production technologies. Systems of production and exploitation. Protection of crops. Herbaceous crops genetics and plant improvement. Agroenergetics

Knowledge and use of animal production technologies. Animal nutrition. Production, protection and exploitation systems. Animal Genetics and animal improvement.

Knowledge and use of engineering applicable to agricultural production processes. Technology and irrigation systems. Agricultural constructions equipment and facilities.

## Subject contents

TOPIC 1. Characterization of the conditioning factors of the physical environment. Climatic characteristics. Characterization of soils. Information from soils available (characterization and interpretation work). Identification of the main conditions or limitations for production agriculture. Soil fertility. Compilation of complementary information. Implications in production systems.

(2 h theory + 2 hours guided activity in class)

TOPIC 2. PLANT PRODUCTION SYSTEM: Study and choice of production plan alternatives. Alternative crops: Election of crops Rotation and alternative sheet, selection criteria. Choice of rotation. Description of applied crop technology

to the chosen crop: Simple description and second form of file that will be delivered and explained during the face-to-face class time and that will include

(6 h theory + 6 hours guided activity in class)

TOPIC 3. ANIMAL PRODUCTION SYSTEM: Study and choice of production plan alternatives. Alternatives related to animal material Alternatives related to food. Animal management: Productive cycle. Alternatives related to

facilities and equipment. Health program Welfare and transport. final product Amount of product obtained.

(4 h theory + 8 hours guided activity in class)

TOPIC 4. Study of ENVIRONMENTAL ASPECTS OF PLANT AND ANIMAL PRODUCTION (Plants of livestock droppings,

Vulnerable zone regulations for fertilization calculations, animal welfare regulations, chemical and phytosanitary products to be used,

Compliance with regulations, etc...

(2 hours of theory + 2 hours of guided activity in class)

TOPIC 5. ENGINEERING ASPECTS. Irrigation system planning. constructions Other engineering aspects to consider according to

proposed project (2 hours theory + 2 hours guided activity in class)

TOPIC 6. Setting up a BUSINESS PLAN WITH ECONOMIC ASPECTS.

(2 hours theory + 2 hours guided activity in class)

practical activities

Practice I. Visits to integrated agricultural-livestock farms. Visits discussion seminar (14 hours)

## Evaluation

Type of activity	Evaluatory activity		Weight
	Procedure	Number	(%)
participatory classes	Evaluation of compliance with partial objectives	6	20
visits	visit report	4	20
Public presentation and final document	Evaluation of the final document and public defense	1	60

Total			100
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To pass the subject, the average weighted grade must exceed 5 out of 10 and the block that corresponds to the document and its presentation

must exceed 4 out of 10. If the assessment of the final document is not exceeded with a 4, a recovery will be available on the established date

in the calendar in which the corrected document will be presented for re-evaluation.

The alternative evaluation will consist of the presentation of a document that presents an agricultural planning of an operation with a

value of 80%. The visits planned in the subject are a fundamental part and therefore the reports will count for 20% of the final grade

## Bibliography

ALLEN R.G.; PEREIRA, L.S.; RAES, D., SMITH, M. 1998. Crop evapotranspiration. Guidelines for computing crop water requirements. FAO Irrigation and drainage paper n. 56. FAO Roma (Italia). 300 pp.

Appleby, M.C., Mench, J.A., Hughes, B.O., 2004. Poultry behavior and welfare. CABI Publishing. Wallingford.

Buxadé, C., 1995. Zootecnia. Bases de producción animal. 10 tomos. Mundiprensa. Madrid

Buxadé, C., 2006. Bienestar animal y vacuno de leche: mitos y realidades. Euroganadería. Madrid.

Buxadé, C., Torres, M.E., 2007. Vacuno de leche de alta producción: sus alojamientos e instalaciones. Euroganadería. Madrid.

Faucitano, L., Schaefer, A.L., 2008. Welfare of pigs: from birth to slaughter. Quae. Versailles.

Leeson, S., Summers, J.D., 2000. Broiler breeder production. University books. Guelph.

Loomis R.S., Connor D.J. 1992. Crop Ecology: Productivity and management in.

Agricultural Systems. Cambridge.

MARTIN DE SANTA OLALLA F., LÓPEZ P., CALERA A. (Coord.) 2005. Agua y agronomía. Ed. Mundi-Prensa. Universidad de Castilla-La Mancha.

Santiveri P., Cantero-Martinez C., Lloveras J. 1995. Prácticas de Cultivos extensivos. Plan 1993. UdL-ETSEA. Lleida. pp.106.

Sisquella M., Lloveras J., Santiveri P., Cantero-Martinez C., 2004. Técnicas de gestión ambiental en cultivos extensivos de regadío. Proyecto TRAMA. Fundació Catalana de Cooperació. Lleida. ISBN. 84-688-7856-1.

Pizarro, F. 1996. Riegos localizados de alta frecuencia: goteo, microaspersión y exudación. Mundi Prensa

Tarjuelo, J.M. 1995. El riego por aspersion y su tecnología. Mundi Prensa

Ministerio de vivienda, rev 2006: CTE

Ministerio de Fomento, 2008: EHE-08

Villar J.M., Villar P. 2010. Fertilidad de suelos y nutrición de

plantas. Versión 3.27. Quaderns DMACS núm. 30. 173 pp. (Pendiente del

Depósito legal)

Zea, J., Diaz, M.D., 1990. Producción de carne con pastos y forrajes. Mundi-Prensa. Madrid.

Complementàries

Barragán, J. Monserrat, J. 2007. Algunas notas para clases de Hidráulica y Riegos. Universitat de Lleida

Cantero-Martínez C., Santiveri F., Lloveras J., Chocarro C. 2006. Agronomy of Field Crops. In Estany J. (ed.) Agriculture and Agri-Food Production in perspective. Profile of the sector in Catalonia. University of Lleida, Lleida, 2006. ISBN-84-8409-207-0. 42 pp.

Doorenbos J.; Pruitt WO. 1976. Las necesidades de agua de los cultivos. FAO. Roma 210 pp.

Fernández, R. et al. 1999. Manual de riego para agricultores. Módulo 3. Riego per aspersión. Módulo 4. Riego localizado. Junta de Andalucía, Consejería de Agricultura y Pesca. Inclou un CD amb imatges i vídeos

Pujol M. 1983. Les lleguminoses de gr?. EUITA. Barcelona. 32 pp.

Pujol M. 1984. Conceptes de morfologia i biologia de les gr?minees. EUITA. Barcelona. 60 pp.

Pujol M. 1984. Els Cereals: Generalitats. EUITA. Barcelona. 165 pp.

Pujol M. 1998. Gramíneas: Aplicaciones Agronómicas. Ediciones UPC. Barcelona. 219 pp.

Pujol M. 1998. Cultius herbacis per a Indústries Agroalimentaries. Ed. Romany? Valls. Capellades. 253 pp.

Sisquella M., Lloveras J., Alvaro J., Santiveri P., Cantero-Martinez C., 2004. Técnicas de cultivo para la producción de maíz, trigo y alfalfa en los regadíos del valle del Ebro. Proyecto TRAMA. Fundació Catalana de Cooperació. Lleida. ISBN. 84-688-7860-X.

Wild A. 1973. Russell's Soil Conditions and Plant Growth. Longman Scientific and Technical. Harlow. 991 pp.

Projectes o treballs finals de carrera dipositats a la biblioteca de l'Escola Tècnica Superior d'Enginyeria Agrària de la Universitat de Lleida que puguin servir com a referència segons el cas ha analitzar

Manuale de bona pràctica (fabricants, gremis, col·legis, NTE, asseguradores)

Referències electròniques

<http://www.irta.es/>

<http://www.genvce.org/>

<http://www.nolaboreo.es/>

<http://www.aeac-sv.org/>

<http://www.ruralcat.net/>

[http://www.producciointegrada.cat/normes\\_tecniques](http://www.producciointegrada.cat/normes_tecniques)

<http://www.gencat.cat/darp/>

<http://www.mapa.es/es/agricultura/agricultura.htm>

[http://ec.europa.eu/sanco\\_pesticides/public/index.cfm](http://ec.europa.eu/sanco_pesticides/public/index.cfm)