Universitat de Lleida

DEGREE CURRICULUM

IRRIGATION

Coordination: MONSERRAT VISCARRI, JOAQUIM

Academic year 2023-24

IRRIGATION 2023-24

Subject's general information

Subject name	IRRIGATION
Code	102532
Semester	1st Q(SEMESTER) CONTINUED EVALUATION
Typology	

Degree	Course	Character	Modality
Bachelor's Degree in Agricultural and Food Engineering	3	COMPULSORY	Attendance-based

Course number of credits (ECTS)	6
Type of activity, credits, and groups	

Activity type	PRACAMP	PRALAB	PRAULA	TEORIA
Number of credits	0.2	0.2	3.8	1.8
Number of groups	1	2	1	1

Coordination	MONSERRAT VISCARRI, JOAQUIM
Department	AGRICULTURAL AND FOREST SCIENCES AND ENGINEERING
Important information on data processing	Consult this link for more information.
Language	Class teaching is in Catalan or Spanish. For English students english written documents and tutorship will be given.

IRRIGATION 2023-24

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
MONSERRAT VISCARRI, JOAQUIM	joaquim.monserrat@udl.cat	6,2	Tuesday 16 - 18 h Friday, 12 - 14 h

Learning objectives

RA1: Determine when, how and how much water should be applied in an irrigation event

RA2: Determine Irrigation quality indexs

RA3: Design of pressurized irrigation facilities

Competences

Students should know how to design and manage pressurized irrigation facilities. Make technical reports and present the results.

Subject contents

Contents

Block 1. Introduction. Water cycle and agriculture. Irrigation methods.

Block 2.Drip and sprinkle planning factors. Water needs. Salt leaching. Layout of set systems.

Block 3.Irrigation emitters. Hydraulics and uniformity considerations.

Block 4. Irrigation assessment. Efficiency and uniformity indexs

Block 5 Drip and sprinkle lateral design

Block 6. Drip and sprinkle submain design. Rectangular and non rectangular subunits.

Block 7. Main delivery system design

Block 8. Filtration types. Filter design

Practical activities

Laboratory practices

Practice 1. Gravimetric determination of ET and soil-water characterisitcs.

Practice 2. Hydraulic assessment and modeling of a drip irrigation lateral.

Practice 3. Set Sprinkler assessment

Field journey

Visit to a irrigation plot set

Methodology

Classes will be in spanish or catalan. For english students written documents will be given and an irrigation project should be done.

Development plan

First half of semester will be on Planning factors and Irrigation assessment

Second half will be about system pipe design

Evaluation

For english students evaluation will be based on continued assessment of the project, a final presentation and practices.

Bibliography

KELLER, J. BLIESNER R.D. (1990). Sprinkle and trickle irrigation. Van Nostrand Reinhold

JENSEN, M.E.; (1980) – Design and operation of farm irrigation systems - ASAE

BURT, C. and STYLES, S. 2016. Drip and Microirrigation Design and Management. ITRC.