Course Description Form

1. Course Name :
Irrigation
2. Course Code:
IRIG349
3. Semester / Year:
First semester 2024/2025
4. Description Preparation Date:
16/9/2024
5. Available Attendance Forms:
In presence
6. Number of Credit Hours (Total) / Number of Units (Total) :
2 Theoretical +3 Practical / 3.5 Unit
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Faris Akram Salih Al-Wazzan Nour Jamal Hussein Email: dr.farisakram@uomosul.edu.iq
8. Course Objectives

Course Objectives	1- Preparing students who have the ability to use modern irrigation methods and desc these methods accurately with the possibility of using them within Iraqi soils, wl represent calcareous soils... and integrating these methods with drainage networks disposal of excess water..... 2- Entering the agricultural sector with distinguished efficiency through participation irrigation projects, modern irrigation techniques, and the use of the best methods in o to reduce water use within agricultural lands and reduce the risk of salt and desert.. 3- Directing students towards a desire to obtain better experiences when applying postgraduate studies..

1. Teaching and Learning Strategies

Theoretical: -Interactive lecture -Brainstorming -Dialogue and discussion -Assigning tasks and reporting -Presentations of models of irrigation and drainage networks	**Practical:** - Assigning group work to reveal leadership skills - Assigning tasks and reporting for each experiment - He is assigned to prepare a report entitled from his own diligence and prepare it for discussion with Students

2. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical 3Practical	**Theoretical:** Explains the concept to the student Irrigation and relationships mathematical **practical :** Empowering the student to solve Equations	**Theoretical:** The concept of irrigation and the introduction to irrigation with mathematical relationships between the size and mass of soil components **practical :** Mathematical relationships for soil components and the equivalent depth of soil water	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
2	2 Theoretical 3Practical	**theoretical:** Explains depth to the student The equivalent and its importance **practical :** Explains to the student Fundamentals of humidity measurement	**theoretical:** Equivalent depth derivations with solving mathematical problems **practical :** Methods for measuring soil moisture	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
3	2 Theoretical 3Practical 2 Theoretical 3Practical	**Theoretical:** Explains the concepts of movement to the student **practical :** Shows the student the measurement Field capacity And the wilting point	**theoretical:** Physical concepts of motion and its laws **practical :** Measuring field capacity and permanent wil point	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports **theoretical:**	Conduct daily examinations. Assignment discussions

4	2 Theoretical 3Practical	**Theoretical**: Explains to the student Types of pumps agricultura **practical :** Explains measurement methods using multiple methods	**Theoretical:** Choosing the type of pump with examples practical : Methods for measuring irrigation water discharge	Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
5	2 Theoretical 3Practical	**Theoretical:** Enabling the student to Irrigation water evaluation **practical :** Shows mathematical applications weirs	**Theoretical:** Evaluation of irrigation water quality **practical :** Irrigation canal design	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
6	2 Theoretical 3Practical	**Theoretical:** Shows the student importance Irrigation efficiencies **practical :** Empowering understanding competencies Irrigation	**Theoretical:** Irrigation efficiencies with example **practical :** Types of irrigation efficiencies with solutions and examples	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
7	2 Theoretical 3Practical	**Theoretical:** Enabling the student Understanding evaporation transpiration **practical :** Explains method measuring Water consumption	**Theoretical:** evaporation and transpiration **practical :** Water requirements measurements	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions

8	2 Theoretical 3Practical	**Theoretical:** Explains to student importance irrigation scheduling **practical :** Explains the basics of irrigation scheduling	**Theoretical:** Irrigation scheduling **practical :** Methods of scheduling irrigation with solutions and examples	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
9	2 Theoretical 3Practical	**Theoretical:** Shows the student importance Water requirement of crop **practical :** Empower student to Calculate the plant's water requirement water	**Theoretical:** Water requirement of the crop **practical :** Calculate water requirements and solve examples	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
10	2 Theoretical 3Practical	**Theoretical:** The student can Knowledge of irrigation cycle **practical :** Explains to student calculation of period between ritual and anothe	**Theoretical:** Irrigation frequency Irrigation cycle **practical :** Calculating irrigation quantities and irrigation cycle	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
11	2 Theoretical 3Practical 2 Theoretical 3Practical	**Theoretical:** The student shows how Water entry into the soil **practical :** Shows the student methods Instantaneous Infiltration measurement	**Theoretical:** Water Infiltration **practical :** Infiltration measurement	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
	2 Theoretical		**Theoretical:**	**theoretical:**	

12	3Practical	**Theoretical**: Explains importance irrigation Surfact **practical :** Shows irrigation methods	Surface irrigation methods **practical :** Surface and subsurface irrigation	Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
13	**2 Theoretical 3Practical**	**Theoretical:** Shows sprinkler irrigation systems **practical :** Explains strip irrigation systems	**Theoretical:** Strip irrigation **practical :** Arrangement of strip irrigation and its types	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
14	**2 Theoretical 3Practical**	**Theoretical:** Shows Sprinkler Irrigation **practical :** Explains sprinkler irrigation system	**theoretical:** Basin irrigation and sprinkler irrigation **practical :** Arrangement and types of sprinklers	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
15	**2 Theoretical 3Practical**	**theoretical:** Explains drip irrigation systems **practical:** Shows drip irrigation systems	**Theoretical:** Drip irrigation **practical :** Arrangement of drippers and their mechanism of operatio	**theoretical:** Audio methods style Writing on the board Direct dialogue style **practical :** Adapt tasks and reports	Conduct daily examinations. Assignment discussions
3. Course evaluation					

Relative weight %	Degree	Calendar appointment (weekly)	Calendar methods	ت
13%	7 Theoretical + 6 practical	Theoretically week (15) Practically week 1-15	Theoretical final report + practical experience reports	1
6 %	4+ Theoretical 2 practical	week (3)	Quiz(1)	2
15%	10 Theoretical+ 5 practical	week (9)	Exam Midterm (Theoretical and practical	3
6%	4 + Theoretical 2 practical	week (12)	Quiz(2)	4
20%	20	Practical exam week	Final practical test	5
40%	40	Theory exam week	Final theoretical test	6
100%	100		Total	

4. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Irrigation... Dr. Issam Khudair Al-Hadithi
Main references (sources)	Irrigation and drainage book by Dr. Laith K
Recommended books and references (scientific journals, reports...)	SSSJ , WATER J .
Electronic References, Websites	https://doi.org/10.2136/sssabookser5.1.2ed

Dr. Faris akram salih Al-Wazzan

Theoretical teacher

Nour Jamal Hussein

Practical teacher

Abdul Qadir Abash Al-Hadidi
Head of the scientific committee

Khalid Anwar Khalid
Head of the Department of Soil Sciences and Water Resources