

Course description form

Irrigation and Drainage

This course description provides a summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he or she has made the most of the learning opportunities available. It must be linked to the program description.

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| 1. Educational Institution | Warith Al-Anbiyaa University |
| 2. Department/Center | Civil Engineering |
| 3. Name/code of the course | Irrigation & drainage engineering |
| Lecturer name | Asst. Lect. Saja Ali |
| 4. Available forms of attendance | Students who are regularly studying |
| 5. Semester/Year | 2023-2024 (Semester) |
| 6. Number of teaching hours (total) | 120 |
| 7. The date this description was prepared | 14/2/2024 |

Course objectives

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| 1. Introducing students to the principles of irrigation and drainage engineering |
| 2. Introducing students to the basics that are adopted in the field of designing irrigation networks and drainage networks |
| 3. Definition of the relationship between soil and water |
| 4. Identify the mathematical relationships related to water consumption |
| 6. Learn about different irrigation methods |

Course outcomes and teaching, learning and evaluation methods .

A- Cognitive objectives: At the end of the course, the learner will be able to do the following:

1. Calculate field capacity and equivalent water depth
2. Calculating water consumption.
3. Knowing the amount of water in irrigation canals according to the water needs of agricultural fields.
4. Design of narration channels.

B - The skills objectives of the course

1. Arouse the student's curiosity about the nature of irrigation and drainage engineering.
2. How to use various topics as a basis for the process of designing narrative channels.
3. Linking the theoretical side with the practical side and transferring students' minds to realistic applications.

Teaching and learning methods

1. Explain a comprehensive introduction to each study topic and link the current topic to previous topics.
2. Giving theoretical lectures.
3. Work to ensure that the student is the focus of providing information through brainstorming
4. Give and explain sufficient examples.
5. Adopting a written solution instead of an oral solution due to the importance of the topic in irrigation and drainage engineering.

Evaluation methods

- 1.Short written examinations
- 2.Participation inside the classroom .
- 3.Providing homework assignments that require the end of each topic .
4. Semester and final exams

D - Transferable general and qualifying skills (other skills related to employability and personal development).

Developing the student's ability and ability to:

1. Calculate field capacity and equivalent water depth
2. Calculating water consumption.
3. Knowing the amount of water in irrigation canals according to the water needs of agricultural fields.
5. Design of irrigation channels

| 1. Course structure | | | | | | | | | |
|---------------------|---------------------|-------------------------|--------------------------------|--|--|--|---|----|-------|
| Evaluation method | Teaching method | Name of unit/or subject | Required learning outcome | Hours | Week | | | | |
| Quiz.3 | 1-home works | .course exams. 2 | Theoretical + Practical | Introduction, Soil and water , Consumptive use | Introducing students to the basic principles of irrigation and drainage engineering, as well as the relationship between water and soil, and also identifying water consumption. | 20 | 1-5 | | |
| | | | | | Theoretical + Practical | consumptive use, Irrigation requirements and efficiencies, Infiltration and intake | Identify water consumption and requirements Irrigation, irrigation efficiency and infiltration | 20 | 6-10 |
| | | | | | Theoretical + Practical | Methods of irrigation | Identify the different irrigation methods and how Use these methods | 20 | 11-15 |
| | | | | | Theoretical + Practical | Border irrigation Furrow irrigation | Knowledge of irrigation by border and methods | 20 | 16-20 |

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| | | | Design and knowledge of irrigation with furrow And a design method | | |
| | Theoretical + Practical | Basin Irrigation Sprinkler Irrigation. Drip irrigation | Knowing the nature and method of designing each irrigation In basins, sprinkler irrigation and drip irrigation . | 20 | 21-25 |
| | Theoretical + Practical | Networks of irrigation and Drainage engineering | Knowing how to design irrigation and drainage networks According to the natural levels of the land As well as knowing the appropriate drainage methods for each area according to its topography | 20 | 26-30 |