Republic of Iraq

Ministry of Higher Education and Scientific Research
Supervision and Scientific Evaluation Apparatus

College: Shatt Al-Arab University
College: Engineering
Department: Civil Engineering
Stage: 3rd stage

Course Weekly Outline

Week No.	Theoretical	Unit-Chapter
1	Definition of drainage, causes and benefits of drainage	Introduction to the Drainage Engineering
2	Drainage Project Investigations	Introduction to the Drainage Engineering
3	Soil permeability, calculating the soil permeability coefficient	Introduction to the Drainage Engineering
4	Type of drainage systems	Drainage systems
5	The advantages and disadvantages of open drains	Drainage systems
6	The advantages and disadvantages of covered drains	Drainage systems
7	Continuity equation and Manning equation	Design of drain cross sections
8	Problems in the open drains designing	Design of drain cross sections
9	Designing covered drains, drains depth, and solving some problems	Design of drain cross sections
10	Hooghoudt equation	Distance between the drains
11	Hooghoudt equation for a layered	Distance between the drains
12	Equivalent depth and the equation of non-steady state drainage	Distance between the drains
13	The relationship between level, discharge, and the coefficient of hydraulic conductivity in the case of steady flow for confined and unconfined aquifer	Vertical drainage
14	The relationship between the level, discharge of the well, and the coefficient of hydraulic conductivity in the case of unsteady flow	Vertical drainage
15	Special case for pumping wells	Vertical drainage