Date:	Examination No.:	Version: 12/2/2023	Start: 12/2/2023
Module Name - Code	Water Supply Engineering – 1126 Core		
Module Language:	English		
Responsible:	Prof. Dr. Shuokr Qarani Aziz; Asst. Lecturer. Khasro Kakil; Asst. Lecturer. Sarwah Othman Ismael		
Lecture (s):	Soft copies of lectures will provide for the students. Examples will solve on the white board and in the PPTs.		
College:	College of Engineering, Salahaddin University-Erbil		
Duration:	15 week – 1 semester		
Course outcomes:	At the end of the course, the student should learn: 1. Water demand estimation for a community. 2. Identifying suitable water sources to meet the water demand. 3. Designing the pipes for transportation and distribution of water. 4. Designing water storage tanks. 5. Measuring physical, chemical and biological characteristics of water and comparing them with standards. 6. Suggestion and design a water treatment plant units to meet given water quantity and quality requirements. 7. Planning and design a good water distribution system collection system for a community. 8. Analyzing water quality data and select the most attractive raw water resource. 9. Designing a surface water intake and water treatment plant units.		
Course Content:	Fundamental consideration of water, Quantity of water demand and population forecasting, Water quality and analysis, Pipes and pipe fittings, Water distribution system, Water distribution system and water tanks, Water treatment processes, and Intakes, Coagulation and Flocculation, Sedimentation, Filtration, Disinfection.		
Literature:	Brandt M.J., Johnson K.M., Elphanston A.J., and Ratnayaka D.D. (2017) Twort's Water Supply, 7th Edition, Published by Elsevier Ltd. Davis, M. L. (2010) Water and Wastewater Engineering- Design Principles and Practice, The McGraw Hill Companies.		
Type of Teaching:	Theory: 4 hrs Practical: 1 hr		
Pre-requisites:			
Frequency:	Yearly in fall semester		
Requirements for credit points:	For the award of credit points, it is necessary to pass the module exam. The module exam (practical and theoretical) contains: [Written 240 min for theoretical] [Written 45 min for practical] **Student's attendance is required in all classes**.		
Credit point:	5		
Grade Distribution:	The Grade is generated from the examination result(s) with the following 20% activity 10% practical 20% mid-term exam 10% final practical exam 40% final theoretical Exam		