Course Description Form

1. Course Name:	
Sanitary & Environmental Engineering II	
2. Course Code:	
WCV-42-02	
3. Semester / Year:	
Second semester /2024-2025	
4. Description Preparation Date:	
23 / 9 / 2024	
5. Available Attendance Forms:	
Students that are interested in learning	
6. Number of Credit Hours (Total) / Number of Units (Total)	
1. Theoretical Time: 2Hrs/Week / Total: 60Hrs. 2. Lab. Time: 2Hrs / Week / Total: 60Hrs. 3. Tutorial Time: 1Hour / Week / Total: 30Hrs number of units (3 units)	
7. Course administrator's name (mention all, if more than one name)	
Name: Safa'a Sabry Mohammed Email: safaa.sabry@uowa.edu.iq	
8. Course Objectives	
Course Objectives	The Course Objectives are to help 1. Knowing a general Introduction about the Sanitary Engineering. 2. Knowing how to estimate the quantity of water during the design of any waterworks project, and what is necessary to estimate the amount of water, determining the number of people who will be served and their per capita water consumption. 3. The quality of water supplies and their requirements for multi uses of water. 4. Take a look on the water distribution systems in general form ……. 5. Knowing the description of intakes, the general requirements for the location of intakes and design criteria of intake structures. Besides, several types of intakes and the screens. The general requirements for the location and the design criteria of screens. 6. Studying the pumps and pumping stations., the general requirements for the design of pumps and pumping stations. Besides, several types of pumps. 7. Knowing the nature of Coagulation and Flocculation in water, its reasons and removal requirements. 8. Looking for the description of the water clarification (sedimentation) process, the general requirements for the design of the sedimentation

	tank. Besides, the sedimentation theory, the design criteria and the types of sedimentation tanks. 9. Knowing the basic information regarding water filtration process, the general requirements for the design of the filtration unit, the types of filters according to process workability and media. Besides, the design criteria of filtration unit. 10. Knowing all information about the water disinfection, its method, ….etc. 11. Studying the Special treatments of Hardness Removal or Water Softening. 12. Take a general look on introduction to wastewater or sewage, definitions to main terms used with wastewater engineering, the main parts of wastewater collection system and the types of wastewater flowing in the sewer system. Besides, the characteristics of wastewater and the determination of organic matters. 13. Studying all about the quantity of wastewater. 14. Provided by the essential information regarding sewer systems, the components of sewer systems, sewer type and sewer materials. In addition, the flow in sewer systems and the design criteria of sewer network. 15. Obtaining the Appurtenances of the sewer
16. Teaching and Learning Strategies	
Strategy	1. Classic theoretical classes. 2. Practical classes and experimental measurements using laboratory equipment. E-learning. 3. Discussion and responding to students' questions.

10.Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	1. Understanding environmental issues relevant to civil engineering-related activities. 2. Reinforcing the implications of	General concepts of Sanitary & Environmental Engineering	In class	1. Oral examination during daily classes. 2. Joined discussions during lectures.
2	5		Depreciation water	In class	

3	5	processes such as construction within a natural system. 3. Familiarity with preventive and management strategies to combat water, soil, air, and noise pollution. 4. Identifying concepts of water pollution control mechanisms and their impact on	**Expectation population:** Ways and the factors affecting the Expectation population	In class	3. Attendance. 4. Monthly examinations. 5. Mid-year examinations. 6. Final-Year examinations.
4	5		Calculate the required amount of water for fire fighting	In class	
5	5		Types of pipes, valves and accessories	In class	
6	5		Types of systems used in water distribution	In class	

11.Course Evaluation

The score of this material is as follows:
1. (50 of 100) degrees will be divided unequally between the daily attendance, daily preparation, daily oral, monthly examinations, solving problems as H.W., and the reports related to lab. Tests.
(50 of 100) degrees for the final examination.

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Steel, E.W. and McGhee, T.J., 1979. Water supply and sewerage (5th edition). New York: McGraw-Hill. Baruth, E.E. and American Water Works Association, 2005. Water treatment plant design.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Davis, M.L., 2010. Water and wastewater engineering. McGraw-Hill.