



**The Hashemite University  
Faculty of Engineering  
Civil Engineering Program  
Course Syllabus**



**Course Title:** Wastewater Engineering      **Course Number:** 110401455  
**Designation:** Compulsory      **Prerequisite(s):** 110404356  
**Instructor:** Eng. Suzan Albatayneh      **Instructor's e-mail:** suzan@hu.edu.o  
**Office Hours:** 12:00 – 1:00: Sun., Tue.& Thurs., 11:00 – 12:30: Mon. & Wed.

**Course Description (catalog):** This course nourishes students with engineering knowledge of the comprehensive management for the collection and transport, and the treatment and disposal of sewage/wastewater.

**Textbook(s) and/or Other Supplementary Materials:**

1. Metcalf & Eddy, Inc. (1981)\*, Wastewater Engineering: Collection and Pumping of Wastewater, McGraw-Hill.
2. Metcalf & Eddy, Inc. (2007), Wastewater Engineering: Treatment, Disposal, and Reuse, McGraw-Hill.

**References:**

1. Unit operations and processes in environmental engineering / Tom D. Reynolds, Paul A. Richards.

**Major Topics Covered:**

Topics	No. of Weeks	Contact hours*
Introduction	1	3
Water supply and wastewater	1	3
Population forecasting and wastewater Flows estimation	1	3
Scheme for Wastewater Collection and Transport Systems; Sewer System Network	2	6
Design of Sanitary Sewers	1	3
Screening , Grit removal	2	6
sedimentation	1	3
Coagulation and flocculation	1	3
Infiltration/Inflow	1	3
Biological Wastewater Treatment Processes; Reuse of treated wastewater	1	3
Activated sludge	1	3
Waste stabilization ponds	1	3
Disinfection	1	3
<b>Total</b>	<b>15</b>	<b>45</b>

\*Contact hours include lectures, quizzes and exams

**Specific Outcomes of Instruction (Course Learning Outcomes):**

**After completing the course, the student will be able to:**

- 1- Learn the physical/chemical/biological characteristics of and the evaluation technique for sewage [ a, e, k ];
- 2- Learn the theory, engineering application, and design technique for the wastewater treatment unit process [ a, c, e, k].

**Student Outcomes (SO) Addressed by the Course:**

#	Outcome Description	Contribution
<b>General Engineering Student Outcomes</b>		
(a)	an ability to apply knowledge of mathematics, science, and engineering	L (10)
(b)	an ability to design and conduct experiments, as well as to analyze and interpret data	



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(c)	an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	M(40)
(d)	an ability to function on multidisciplinary teams	
(e)	an ability to identify, formulate, and solve engineering problems	M(40)
(f)	an understanding of professional and ethical responsibility	
(g)	an ability to communicate effectively	
(h)	the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
(i)	a recognition of the need for, and an ability to engage in life-long learning	
(j)	a knowledge of contemporary issues	
(k)	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	L(10)
<b>H=High, M= Medium, L=Low</b>		

<b>Grading Plan:</b>	1st Exam	30 Points	7/11/2017	[1:00 ~ 2:00]
	2nd Exam	30 Points	7/12/2017	[1:00 ~ 2:00]
	Final exam	40 points	17/1/2018	[1:30 ~ 3:30]

**General Notes:** Beware of Plagiarism: copying and handing in for credit someone else's work  
Any plagiarism case will result in an automatic 'F' for the course

**Prepared by:** Eng. Suzan Albatayneh **Date:** 15<sup>th</sup> Jan . 2018