

The Hashemite University Faculty of Engineering Civil Engineering Program Course Syllabus



Course Title:	Soil Stabilization and Ground	Course Number:	110401531
	Reinforcement		
Department:	Civil Engineering	Designation:	Elective
Prerequisite(s):	0401336	_	
Instructor:	Dr. Hend Alshatnawi	Instructor's Office:	E3006
Instructor's	Microsoft Teams		
contact:			
Office Hours:	12:00 – 1:30: Sun. and Tue, 12:00 – 1:00: Mon.		
Time:	9:30-11:00 Mon & Wed	Class Room:E2025	
Course	Dynamic compaction, vibro-compaction	on, compaction grouting,	preloading and
Course Description	Dynamic compaction, vibro-compaction prefabricated vertical drains, Blast dens	on, compaction grouting, sification, lime-cement colu	preloading and umns, vibro stone
Course Description (catalog):	Dynamic compaction, vibro-compaction prefabricated vertical drains, Blast dens columns, vibro concrete column, jet anchors, fiber reinforced soils, soil na ground improvement, dewatering, admit	on, compaction grouting, sification, lime-cement colu grouting, deep mixing, M ailed retaining structures, xtures, geopiers.	preloading and umns, vibro stone icropiles, ground geosynthetics in

References: : Hausmann, M. R. (1990). Engineering Principles of Ground Modification, McGraw Hill, NY.

_	-		-
To	nics	covere	۰b٬
	PI00	001010	· • •

Topics	No. of	Contact hours*
	Weeks	
Compaction Theory and Methods	2	6
Deep Densification of Soils	1	3
Traditional and non-traditional methods	2	6
Earth retaining walls	1	3
Geosynthetics and Mechanically Stabilized Earth Walls	2	6
Preloading and use of Vertical Drains	3	9
Chemical Stabilization and Grouting Techniques	3	9
Sheet piles	1	3
Total	15	45

*Contact hours include class lectures and record classes, quizzes and exams

Course objectives:

- 1. To highlight the need for soil improvement.(1)
- 2. To gain an understanding of the need to use different site improvement techniques. (1)
- 3. To describe different site improvement techniques.(1)
- 4. To develop the theoretical background and analysis methods needed for the design of site improvement techniques. (1)
- 5. To develop design guidelines for site improvement techniques. (2).



The Hashemite University Faculty of Engineering Civil Engineering Program Course Syllabus



Student Outcomes (SO) Addressed by the Course:

#	Outcome Description	Contribution
General Engineering Student Outcomes		
(1)	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	M (50)
(2)	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	M (50)
(3)	an ability to communicate effectively with a range of audiences	
(4)	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	
(5)	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	
(6)	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	
(7)	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	
H=High, M = Medium, L =Low		

First Exam Second exam Project Final Exam	(25 Points) (20 Points) (15 Points) (40 Points)
Final Exam	(40 Points)
	First Exam Second exam Project Final Exam

General
Notes:-Students should meet in the classroom on time.
-There are a record class every Thursday sending on Teams
-Meetings with the instructor outside the classroom should be during the office hours.

Prepared by: Dr. Hend Alshatnawi Date: 19/2/2023