

Zarqa University

Faculty of Engineering
Department: Civil Engineering
Course title: Pavement Design
“ 0909474 “



Prerequisite: 0902361
Instructor: Dr : Imad Al-Shalout
Lecture's time: multiple section
Semester: Second 2017
Office Hours: S , T, TH from 10 – 11
12 – 13

Course description:

This course will cover the concepts of Pavements performance and serviceability. Soil for Pavements. Basic Engineering properties of Soil. Classification of soil for highway use. Soil compaction. Bituminous Materials' and testes. Asphalt Mixture. Marshall Methods. Supersaver method. Design of Flexible Pavements Structural Components of fixable Pavements. Asphalt institute design method. AASHTO design method. Design of Rigid pavements. Maintenance and Rehabilitation.

Aims of the course:

- 1- **Design** Asphalt Concrete Mixture by Marshall Methods.
- 2- **Classify** the soil for pavements due to AASHTO Method.
- 3- **Design** Asphalt Concrete mixture by sapper pave methods.
- 4- **Design** of Flexible Pavements due to AASHTO Methods.
- 5- **Design** of Rigid pavements.
- 6- **Explain** the Asphalt Mixtures Relations and low to improve the mixtures.
- 7- **Design** Joints for rigid Pavements and how they are constructed in site.

Intended Learning Outcomes (ILOs):

- (a) An ability to apply knowledge of materials binders.
- (b) An ability to identify , formulate and design the Pavements Engineering problems
- (c) AN ability to design flexible pavement by AASHTO method



Course structures:

Week	C. Hrs	ILOs	Topics	Teaching Procedure	Assessment methods
1-	3	1	Pavement design , introduction and Definition	Ch. 19.1	
2-	2	2	Function of pavement , structural components of Flexible Pavements	Ch. 19.1	
3-	2	2	Typical Road cross section and related items , Types of pavements , loads , and soil stabilization	Ch. 19.2	
4-	3	3	Soil for pavements , soil Engineering for highway and soil characteristics	Ch. 17.1	
5-	4	4	Basic Engineering properties of soil , classification of soil for highway and soil survey	Ch. 17.2,3,4	
6-	1	-	Midterm Test 1		
7-	4	4	Soil compaction and special test for pavement	Ch. 17.5	
8-	5	5	Bituminous Materials' sources of Asphalt , Description and use of Bituminous Binder	Ch. 18.1,2,3	
9-	5	6	Properties of Asphalt materials test and Asphalt Mixtures , Marshall Method , sup pave Methods	Ch. 18.4,5,6	
10-	1	-	Midterm Test #2		
11-	1	-	Assignment Submission and Tutorial session		
12-	6	7	General Principles of flexible pavement design , Asphalt Institute design method , AASHTO design method	Ch. 19.1,2,3	
13-	6	8	Design of rigid pavements , joints in concrete pavements , stresses in rigid Pavements , AASHTO design Methods	Ch.20,1,2,3	
14-	2		Final test		

References:

Traffic and highway Engineering , 5 th Edition by Garber , Luster Hole

Assessment Methods:

Methods	Grade	Date
Test 1	20	6-4-2017
Test 2	20	11-5-2017
Assignment and Quizzes	10	
Final Exam	50	

