University of Jordan
College of Engineering and Technology
Civil Engineering Department
2nd Semester 2016/2017

Course number and name: (0901482) Pavement Design
Class schedule: 3 credits

a. Time and place: Section 2 Mon., Wed.: 2:00-3:30 pm at CE102

b. Office hours: Mon., Wed.: 1:00 – 2:00 pm

Instructor: Prof. Adli H. Al Balbissi
Recommended References:

a. "Traffic & Highway Engineering", N. Garber & L. Hoel, CENGAGE Publication, 5th edition, 2015.
b. "Pavement Analysis and Design", Y. H. Huang, Prentice Hall Publication, 2nd edition, 2004.
c. "Principles of Pavement Design", E. J. Yoder and M. W. Witczak, Willey Publication, 1975.

Course information:

a. Course title, number, and credits: Pavement Design, (0901482), 3 credit hours,
b. Prerequisite: (0901481), Highway and Traffic Engineering
c. Course status: Department required course.
d. Catalog description: Pavement types; structural design: stress analysis, vehicle and traffic consideration, structural design of flexible and rigid pavements; pavement materials: bituminous materials and their uses, asphalt concrete mix design, pavement distress and maintenance, preparation and construction of pavements, and planning of maintenance works.

Course goals and outcomes:

e. Goals: This course is designed to help the student to:
    i. Develop knowledge of pavement materials' properties and uses
    ii. Understand asphalt mixture design principles and procedures
    iii. Develop knowledge of pavement distresses and maintenance procedures
    iv. Develop knowledge of pavement types and design principles
    v. Learn methods for pavement stress computation
    vi. Know about procedures for vehicle and traffic considerations
    vii. Learn about structural design of pavements
f. Expected outcomes: Students will be expected to develop the following skills/understanding upon the successful completion of this course:
    i. Specify desired properties of pavement materials and mixtures

ii. Perform asphalt mix design
iii. Identify pavement distresses and suggest maintenance priorities and solutions
iv. Perform stress analysis of flexible and rigid pavements
v. Perform computations of equivalent axle load and equivalent single wheel load
vi. Design flexible and rigid pavement structures

Topics covered: Syllabus includes 28, 75-minutes class periods), 1 one-hour midterm, continuous evaluation of student class participation through oral quizzes and 1 two-hour final exam. Class periods cover the following topics:

g. Bituminous materials and their uses.
h. Asphalt concrete mix design.
i. Preparation and construction of pavements.
j. Pavement distresses and maintenance.
k. Pavement rehabilitation programming.
l. Soil stabilization.
m. Pavement types, wheel loads, and design factors.
n. Stresses in flexible and rigid pavements.
o. Vehicle and traffic consideration.
p. Structural design of flexible and rigid pavements.
q. Design of seal coat.

Assessment & Grading:

Midterm Exam (Monday 20/3/2017, 2-3 pm)	30%
Class participation	20%
Final exam	50%

2. Notes:

a. Homework is for self practice. This is helpful to the learning process and for more self reliance. However, consultation with the instructor related to the solutions is welcomed.
b. All cases of academic dishonesty will be handled in accordance with university policies and regulations.
c. Students are expected to attend every class session and are responsible for all material, announcements, schedule changes, etc., discussed in class. The university policy regarding the attendance will be adhered.
d. Any students with disabilities who need accommodations in this course are encouraged to speak with the instructor as soon as possible to make appropriate arrangements for these accommodations.