University of Jordan
Faculty of Engineering and Technology
Civil Engineering Department

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a. Course number and name: (0901420) Highway and Traffic Engineering

b. Class schedule: 3 credits

a. Time and place: Monday and Wednesday 9:30-11:00 at Civil 105
b. Office hours: Monday and Wednesday 8:00 – 9:30

c. Instructor: Dr. Rana Imam (r.imam@ju.edu.jo)

d. Text book: Garber and Hoel, Traffic and Highway Engineering, Cengage Learning, 4th Edition, 2008 (Required).

e. References:

- Wright and Dixon, Highway Engineering, John Wiley and Sons, 7th edition, 2004
- Meyer and Miller, Urban Transportation Planning, McGraw Hill, 2nd edition, 2002

f. Course information:

a. Prerequisite: Surveying Lab. (0901282)
b. Department required course.

g. Specific goals of the course:

Expected outcomes: Students will be expected to develop the following skills/understanding upon the successful completion of this course:

i. Understand the steps involved in the Transportation Planning process
ii. Understand the fundamental parameters and relations of traffic flow.
iii. Compute optimum cycle length and phasing plan for a signalized intersection
iv. Differentiate Road and Junction types and layouts
v. Design a highway allowing for differing terrains, horizontal and vertical curves.
vi. Understand the safety aspects of road design.
vii. Understand the uses of traffic signs and pavement markings.

h. Topics covered: Syllabus includes 42, 50-minute class periods, a one-hour midterm exam, and two-hour final exam. The topics are:

a. Introduction to Transportation Planning
b. 4-Step Transportation Planning Process I (Trip Generation)
c. 4-Step Transportation Planning Process II (Trip Distribution)
d. 4-Step Transportation Planning Process III (Mode Choice)
e. 4-Step Transportation Planning Process IV (Traffic Assignment)
f. Introduction to Traffic Engineering
g. Traffic Flow Theory
h. Highway Capacity Analysis
i. Traffic Control I
j. Traffic Control II
k. Road Vehicle Design and Performance
l. Geometric Design of Highways (Vertical Curve)
m. Geometric Design of Highways (Horizontal Curve)

i. Minimum student materials: Text book, class handouts, engineering calculator.

j. Instructional methods:

a. Lecture/Problem solving sessions.
b. Case studies.
c. Homework.
d. Reading assignments.

k. Assessment & Grading:

Quizzes	:	20%
Midterm Exam	:	30%
Final exam	:	50%
Total	**:**	**100%**

l. Notes:

a. All cases of academic dishonesty will be handled in accordance with university policies and regulations.
b. There will be two announced quizzes during the semester. There will be no make-up quizzes.
c. Students are expected to attend EVERY CLASS SESSION and they are responsible for all material, announcements, schedule changes, etc., discussed in class.
d. The university policy regarding the attendance will be strictly adhered to.
e. 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.