Course Number and Name	**CE342-3 Transportation Engineering 2**
Credits hours	3 Credits hours
Contact hours	4 Contact hours; 3 for lecture, 0 for tutorial and 1 for practical
Instructor/s name/s	Dr. Hisham Mohammed Abou Halima
Textbook	• William R. McShane, Roger P. Roess, Elena S. Prassas, "Traffic Engineering", 4th ed., Prentice Hall (2010).
Other supplemental materials	**1-** The American Association of State Highway and Transportation Officials, (2011). 2- N. J. Garber and L. A. Hoel, "Traffic and Highway Engineering", fifth edition, CENGAGE Learning, (2015). 3- Lecture notes.
Specific course information	
a. Catalog description	The purpose of this course is to provide students with fundamental introduction of traffic engineering, such as human factor design**,** traffic operations including traffic data collection, traffic count methods, traffic flow theory, highway capacity analysis, and sustainable transportation system. At the end of this course, the student should be able to understand basic traffic flow theory, to conduct traffic data collection and analysis, and to apply capacity analysis methods for both highway and intersections. Knowledge of traffic engineering is required for the geometric design of highways and cross sectional, determine of capacity and level of services, rate of flow, and design of traffic signals. The skills and knowledge required carrying out the traffic analyses and designs that are often encountered in engineering practice will be provided.
b. Prerequisite	CE341-3 Transportation Engineering 1
c. Required / Elective	Required
Specific goals for the course	
Course Learning Outcomes (CLOs)	By the end of this course, the student will be able to: 1. Identify traffic stream characteristics. 2. Explain the importance of the different categories of traffic studies. 3. Apply statistical concepts in traffic engineering. 4. Understand the basic traffic flow theory. 5. Demonstrate the relationships among the different elements of traffic flow. 6. Identify concept of capacity and level of service. 7. Determine the capacity and LOS for Freeway and multilane highways using the HCM 2000 procedures. 8. Evaluate level of service and capacity for two-lane highway segments using the operational analysis procedure. 9. Describe the various types of traffic control devices.
Student outcomes that addressed by the	The following student outcomes are addressed by the course: SO1: An ability to identify, formulate and solve complex engineering problems by

course	applying principles of engineering, science, and mathematics. SO3: An ability to communicate effectively with a range of audiences. SO4: 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. SO5: 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.

Topics to be covered

Topic	Number of weeks
Traffic Stream Characteristics	**2**
Traffic Volume Studies	**2**
Spot Speed Studies	**2**
Traffic flow Principles and Models	**2**
Capacity Analysis and Level of Service for Freeway segments	**2**
Capacity Analysis and Level of Service for Multilane Highways	**2**
Capacity Analysis and Level of Service for Two lane Highways	**2**
Intersection Design and Control	**1**

Schedule of Assessment Tasks for Students During the Semester

Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week due	Proportion of Total Assessment
Homework	Per 2 weeks	10%
Research works	Per 2 weeks	10%
Midterm-exam I	7th week	15%
Midterm-exam II	12th week	15%
Term Project	Final week	20%
Final Exam	Final week	30%

CLO-SO Map							
	S01	S02	S03	S04	S05	S06	S07
CLO 1	√			√	√		
CLO 2	√			√	√		
CLO 3	√			√	√		
CLO 4	√			√	√		

CLO 5	√		√	√	√		
CLO 6	√			√	√		
CLO 7	√			√	√		
CLO 8	√			√	√		
CLO 9			√	√	√		