Course Description Form

1. Course Name

Traffic Engineering

2. Course Code:

3. Semester / Year

Semester

4. Description Preparation Date

1/ 10 / 2023

5. Available Attendance Forms

Students who are regularly studying

6. Number of Credit Hours (Total) / Number of Units (Total)

3 hours weekly/3 units

7. Course administrator's name (mention all, if more than one name)

Name: Duaa Falah Rasool
Email: duaa.falah@uowa.edu.iq

8. Course Objectives

Course Objectives	• Introducing students to the applied principles of traffic engineering in civil engineering. • Introducing students to the basics used in the field of traffic analysis and planning. • The basics that are adopted in collecting traffic data. • Identify the types of traffic volumes that transportation networks are exposed to • Identify the appropriate methods for calculating different traffic volumes. • Learn and learn about most traffic problems and be exposed to ways to solve them.

9. Teaching and Learning Strategies

Strategy	1-Explain a comprehensive introduction to each academic topic and link the topics together. 2-Giving theoretical lectures. 3-Work on making the student the focus of providing information through brainstorming 4-Give and explain sufficient examples. 5-Adopting on-site exit and basically applying theoretical concepts.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Relationships between speed and traffic flow	1.Fundamental relationship between speed-flow-density, relationship derivation, linear & nonlinear relation (speed-density).	theoretical	
3	2	Road distributions and types	1.Headway distribution (double exponential distribution), free flow stream, restrained flow stream	theoretical	
4-5	6	Traffic volumes and hourly, daily and monthly variation in traffic volumes	Traffic volume count types, techniques, Traffic volume variation, short counts, traffic volume measurements types.	theoretical + applied	
6-7	4	Traffic parking	Car parking surveys, car parking types, measurements car parking, determination of off-street parking location (moment method)	theoretical + applied	
8-9	4	Classification and analysis of methods	Analysis of basic freeway section (uninterrupted flow) factors affecting capacity, service flow rates, and level of service types	theoretical	
10	2	Traffic delays	Traffic delay types: signalized intersection, enroute delay	theoretical + applied	
11-1	6	Types of intersections and methods of designing them	Types and shapes of intersections, principle of intersection design,	theoretical + applied	

			warrants for signals for at-grade intersection		
13	4	Design of traffic signals	**Design of traffic signals (Webster method)**	theoretical	
14-1	6	Types of traffic signals and their characteristics	**Traffic signs type, shapes, colors, road marking types& application**	theoretical	
17	2	Safe traffic movements	**Traffic Safety**	theoretical	

11. Course Evaluation

1-Short written tests.
2-Participation in the classroom.
3- Submitting homework assignments that require the end of each topic.
4- Semester and final exams.

12. Learning and Teaching Resources

Main references (sources)	The following references will be used in traffic subject 1. HCM (2000). Highway Capacity Manual. Transportation Research Board, TRB Special Report 209, USA. 2. HCM (2010). Highway Capacity Manual. Transportation Research Board, TRB Special Repor 616, USA.
Electronic References, Websites	The following references will be used in traffic subject: 1. Institute of Transportation Engineering, ITE. (2010). Traffic Engineering Handbook. 6th Edition, USA: Washington. 2. Mannering, F., Kilareski,W., and Washburn, S. (2005). Principles of Highway Engineering and Traffic Analysis. 3rd edition, USA.

	3. Pignataro ,L. J. "Traffic Engineering theory and practice" ,Prentice-Hall , Inc., New Jersey, USA, 1973. 4. Salter, R. (1981). Traffic Engineering: Worked Examples and Problems. London, Macmilla