

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<b>Traffic Engineering</b>		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	<b>CIV019</b>		
ECTS Credits	5		
SWL (hr/sem)	<b>125</b>		
Module Level	UGIV	Semester of Delivery	6
Administering Department	CV101	College	Civil Engineering College
Module Leader	Dr. Hamid Ahmed Awad	e-mail	hamid.awad@uoanabr.edu.iq
Module Leader's Acad. Title	Assist Professor	Module Leader's Qualification	Ph.D.
Module Tutor		e-mail	E-mail
Peer Reviewer Name		e-mail	E-mail
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

## Module Aims, Learning Outcomes and Indicative Contents

### أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<b>Module Aims</b> أهداف المادة الدراسية	The main aim of this course is to allow students to develop an understanding of the role of the traffic engineer in traffic planning and operations by providing a comprehensive understanding of traffic flow theory and analysis and their application in assessing the performance of intersections.
<b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"><li>1. identify the characteristics of traffic elements.</li><li>2. know the traffic control measures.</li><li>3. study about the driver and pedestrian behavior.</li><li>4. study about the scope of traffic management.</li></ol>
<b>Indicative Contents</b> المحتويات الإرشادية	Indicative content includes the following. <ol style="list-style-type: none"><li>1. Traffic Engineering Fundamentals: This assessment task is designed to assess a student's ability to apply traffic flow theory to solve practical and numerical problems, and assess transport management strategies that are faced by professional practitioners in the field.</li><li>2. Signalized Intersection Modelling: This assessment task is designed to evaluate a student's ability to develop solutions to real-world operational problems within a road network through the application of models or traffic engineering theory.</li><li>3. Data Collection, Analysis and Performance Measurement : This assessment task is designed to evaluate a student's ability to complete a report that focuses on data collection and analysis procedures normally undertaken by practicing traffic engineers and transport planners.</li></ol>
<b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم	
<b>Strategies</b>	The topic will be presented in a Block mode approach using a mixture of online and face-to-face learning activities, with the latter being completely optional. The topic will make use of Microsoft Teams as an online platform for discussion and presentation of material. In addition, students who require further assistance will have the option to participate in face-to-face computer lab workshops. The Microsoft Teams platform will serve as the primary means of communication for the purposes of elucidating fundamental ideas and facilitating group conversations around the many assessment activities associated with the topic. The course material and practice exercises for the students will be pre-recorded and made available on

	<p>Canvas. To better facilitate comprehension of this material, there will be interactive live discussion sessions held on Microsoft Teams during the "Blocks" that are outlined in the relevant training program. Students will have the opportunity to participate in traffic engineering applications and projects that are relevant to the "real world" as a result of the integration of learning activities. Before participating in the online discussion sessions, students are strongly advised to read the assigned material, perform an analysis of it, and engage in self-reflection on it. This will help them discover difficulties and knowledge gaps in the topic. The applications of the content will primarily center on the process of problem-solving with the assistance of real-world examples that a Traffic Engineer might encounter while working in the field and that are helpful in the accomplishment of the tasks that are being assessed.</p>
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<b>Student Workload (SWL)</b> الحمل الدراسي للطالب			
<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	63	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعياً	4.2
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعياً	4.13
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	125		

<b>Module Evaluation</b> تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	Quizzes	4	10%	3,7,10,15	1,2,3,4
	Assignments	2	5%	8,15	1,2,3,4
	Projects / Lab.	1			
	Report	1	5%	5,10	1,2,3,4
<b>Summative assessment</b>	Midterm Exam	2 hr	20%	12	1,2,3,4
	Final Exam	3hr	60%		All
<b>Total assessment</b>			100% (100 Marks)		

<b>Delivery Plan (Weekly Syllabus)</b> المنهاج الاسبوعي النظري	
	Material Covered
<b>Week 1</b>	Basic Traffic Engineering Concepts
<b>Week 2</b>	Traffic Engineering Studies

<b>Week 3</b>	Spot Speed Studies
<b>Week 4</b>	Traffic Volume Studies
<b>Week 5</b>	Travel Time Studies
<b>Week 6</b>	Pedestrian Studies
<b>Week 7</b>	Parking Studies
<b>Week 8</b>	Principles of Traffic Control
<b>Week 9</b>	Signal Timing Design
<b>Week 10</b>	Actuated Signal Timing Design
<b>Week 11</b>	Signal Coordination for Arterials and Networks
<b>Week 12</b>	Network Signal Coordination
<b>Week 13</b>	Basic Freeways and Multilane Highways (LOS)
<b>Week 14</b>	Analysis of Weaving, Merging, and Diverging Movements
<b>Week 15</b>	Left Turn Bay
<b>Week 16</b>	Preparatory week before the final Exam

### Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
<b>Week 1</b>	Lab 1:
<b>Week 2</b>	Lab 2:
<b>Week 3</b>	Lab 3:
<b>Week 4</b>	Lab 4:
<b>Week 5</b>	Lab 5:
<b>Week 6</b>	Lab 6:

### Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	Garber, Nicholas J., and Lester A. Hoel. Traffic and highway engineering. Cengage Learning, 2018.	Yes

<b>Recommended Texts</b>	Mannering, Fred L., and Scott S. Washburn. Principles of highway engineering and traffic analysis. John Wiley & Sons, 2020.	Yes
<b>Websites</b>	<a href="https://www.uoanbar.edu.iq/Bank-Section.php">https://www.uoanbar.edu.iq/Bank-Section.php</a>	

<b>Grading Scheme</b> مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group (50 - 100)</b>	<b>A</b> - Excellent	امتياز	90 - 100	Outstanding Performance
	<b>B</b> - Very Good	جيد جدا	80 - 89	Above average with some errors
	<b>C</b> - Good	جيد	70 - 79	Sound work with notable errors
	<b>D</b> - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	<b>E</b> - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 – 49)</b>	<b>FX</b> – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F</b> – Fail	راسب	(0-44)	Considerable amount of work required
<p><b>Note:</b> Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p>				