



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Traffic Counts and Surveys							
Course Code		MCE551		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	195 ( <i>Hours</i> )	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		To teach the basic concepts of traffic; To teach the basics of surveys on traffic flows; To teach the basics of numerical analyses on traffic flows; To teach the basics of implementation studies on traffic flows;							
Course Content		Fundamental variables of Traffic Flow: Flow, Density, Speed – Statistical and probabilistic models of flow variables – Observation of flow variables – Fundamental relationships (diagrams) of traffic flow: Speed-Density, Flow-Speed, Flow-Density – Mathematical models of fundamental diagrams – Highway Capacity - Types of highway capacity – Relationship of road geometric standarts with capacity - Traffic volume estimation and highway design – Surveys on Speed, Density and volume – Delay studies - Parking studies – Pedestrian volume studies – Origin Destination studies – Public transportation surveys – Accident studies.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)		Lec. Cenk OZAN							

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	40
Assignment	2	30

### Recommended or Required Reading

1	Kutlu, K., Trafik Tekniği, İTÜ Rektörlüğü Sayı 1508, İstanbul, 1993.
2	Daganzo, C.F., Fundamentals of Transportation and Traffic Operations, Pergamon-Elsevier, Oxford U.K., 1997.
3	May, A.D., Traffic Flow Fundamentals, Printice-Hall, New York, 1990
4	Mannering, F.L., Kilareski, W.P., Principles of Highway Engineering and Traffic Analysis, Fifth edition, Wiley, New York, 2012
5	TRB Special report no 209, Highway Capacity Manual, Washington, D.C., Transportation Research Board, National Research Council, 20105

Week	Weekly Detailed Course Contents	
1	Theoretical	Traffic in Transportation, Traffic Engineering
2	Theoretical	Traffic Flow Variables
3	Theoretical	Volume study. Spot speed study
4	Theoretical	Statistical properties of traffic volume and speed.
5	Theoretical	Fundamental Relationships (diagrams) of Traffic Flow
6	Theoretical	Mathematical Models of Fundamental Traffic Flow Relationships
7	Theoretical	Capacity: Capacity concept and types of capacity
8	Theoretical	Level of service
9	Intermediate Exam	Midterm exam
10	Theoretical	Travel time and delay study
11	Theoretical	Parking study
12	Theoretical	Pedestrian study
13	Theoretical	Origin-Destination study
14	Theoretical	Traffic accidents study
15	Theoretical	Traffic impact study
16	Final Exam	Final exam



**Workload Calculation**

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	2	0	30	60
Individual Work	14	0	3	42
Midterm Examination	1	23	2	25
Final Examination	1	24	2	26
Total Workload (Hours)				195
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

**Learning Outcomes**

1	will be able to Design a traffic study
2	will be able to exercise the methods of observation and mapping on basic and derived variables of traffic flow
3	will be able to explicate the fundamental relationships and the basic models of traffic flow
4	will be able to apply highway capacity analysis in presence of traffic volume data
5	will be able to determine the effects generated by traffic

**Programme Outcomes (Civil Engineering Master)**

1	To be able to develop expertise knowledge in a Civil engineering area founded on their graduate competence.
2	To be able to use the theoretical and practical expertise knowledge gained in their specialty area.
3	To be able to use the information, problem solving and / or practical skills from the field, in interdisciplinary studies.
4	To be able to create new knowledge by integrating their knowledge area with the knowledge coming from different disciplines; and solve problems that need expertise by using scientific research methods
5	To be able to solve the problems related to his/her area by using appropriate research methods
6	To be able to devise a problem in their specialty area, develop a solution methodology, solve the problem, and interpret the results and take action if necessary
7	To be able to criticize the knowledge in their specialty area, guide the learning process, and independently direct high level studies
8	To be able to systematically communicate the recent developments in their specialty area and their own studies to groups both inside and outside their specialty area, orally, in writing and visually
9	To be able to use computer software at a level required by their specialty area with drawing upon information and communication technology at a high level
10	To be able to introduce scientific, technological, social and cultural advancements in the field of civil engineering and to contribute to the process of being an information of the society and to sustain it.
11	To be conscious of professional and ethical responsibility and contribute to the establishment of this consciousness.
12	To be able to protect social, scientific, and ethical values during collection, interpretation, and dissemination stages of the data associated with their specialty area; instruct and supervise these values
13	To be able to use at least one foreign language in a level to follow current developments related to the field.

**Contribution of Learning Outcomes to Programme Outcomes** 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	5	4	5	4	5
P2	4	5	4	5	5
P3	5	4	5	4	5
P4	4	5	4	5	5
P5	5	4	5	4	4
P6	4	5	4	5	5
P7	5	4	5	4	4
P8	4	5	4	5	5
P9	5	4	5	4	5
P10	4	5	4	5	4
P11	5	4	5	5	5
P12	4	5	5	4	4
P13	5	5	5	5	5

