

Department of Civil Engineering			
Transportation Systems Lab. I (61361)			
Total Credits	1		
major compulsory			
Prerequisites	P1 : Transportation Systems Eng'g I (61360) P11Synch. : Transportation Systems Eng'g I (61360)		
Course Contents			
Practical training on selected issues of highway location and geometric design of highway facilities and the physical characteristics of pavement materials as well as pavement design.			
Intended Learning Outcomes (ILO's)		Student Outcomes (SO's)	Contribution
1	an ability to apply knowledge of mathematics, science, and engineering in highway geometrics and pavements	A	10 %
2	(2) an ability to design and conduct pavement experiments and and highway location and geometric studies,, as well as to analyze and interpret related data	B	40 %
3	an ability to design highways and their components and design pavement mixtures to meet desired needs within realistic constraints such as economic, environmental, social, political, safety, and sustainability reflecting the professional and ethical responsibility	C	30 %
4	(4) an ability to identify, formulate, and solve highway geometric and pavement engineering problems as part of a multi-disciplinary team	D	20 %
Textbook and/ or References			
Al-Sahili, K. Transportation Engineering Systems Lab I Manual, An-Najah National University , 2013.			
Assessment Criteria		Percent (%)	
Mid. Term Exam		20 %	
Projects		20 %	
Laboratory Work		20 %	
Final Exam		40 %	
Course Plan			
Week	Topic		
1	General Introduction Road Location and Design		
2	Application of Road Location Principles		
3	Geometric Design of Highway Facilities		
4, 5, 6 &7	Project: Road Location and Geometric Design		
8	CBR Test		
9	Asphalt penetration, viscosity, flash and fire points		
10	Asphalt softening point and ductility		
11, 12 &13	Pavement Mix Design		
14	Asphalt recovery		