

Tamkang University Academic Year 101, 2 Semester  
Course Syllabus

Course Title	Transportation Engineering	Instructor	Chih-Lin Chung	
Department/Year/Class	Course Details			
TLTXB2A	<input checked="" type="checkbox"/> Required <input type="checkbox"/> Selective	<input type="checkbox"/> 0 ( One Semester ) <input type="checkbox"/> 1 ( 1st Semester ) <input checked="" type="checkbox"/> 2 ( 2nd Semester ) <input type="checkbox"/> 3 ( 3rd Semester )	Credits	2
Aim of Education		Core Competences		
1. To acquire professional knowledge; 2. To make future planning effectively; 3. To apply theories to practices; 4. To practice personnel communication and teamwork; 5. To be capable of analyzing problems and proposing suggestions; 6. To conform to professional ethics and develop global visions;		A. To obtain basic management knowledge; B. To obtain professional transportation knowledge; C. To obtain basic system analysis skills; D. To manipulate professional software; E. To develop professional and interdisciplinary integration ability; F. To improve expression and communication skills; G. To build transportation ethics, care for humanity, and global visions.		
<b>Course Introduction (50 to 100 words)</b>	This course introduces transportation engineering-related concepts and guidelines, covering six parts as 1) Transportation Engineering Introduction, 2) Transportation System Planning, 3) Highway Engineering, 4) Railway Engineering, 5) Air Transport Engineering, and 6) Harbor Engineering. Transportation Engineering (I) in the first semester highlights the first three parts and Transportation Engineering (II) in this (second) semester will introduce the remainder three parts. This course is designed for undergraduates at their sophomore years.			
<b>The Relevance among Teaching Objectives, Objective Levels and Core Competences</b>				
<b>I. Objective Levels (select applicable ones) :</b>				
<b>(I) Cognitive Domain : C1 Remembering 、 C2 Understanding 、 C3 Applying 、 C4 Analyzing 、 C5 Evaluating 、 C6 Creating</b>				
<b>(II) Psychomotor Domain : P1 Imitation 、 P2 Mechanism 、 P3 Independent Operation 、 P4 Linked Operation 、 P5 Automation 、 P6 Origination</b>				
<b>(III) Affective Domain : A1 Receiving 、 A2 Responding 、 A3 Valuing 、 A4 Organizing 、 A5 Charaterizing 、 A6 Implementing</b>				
<b>II. The Relevance among Teaching Objectives, Objective Levels and Core Competences :</b>				
(I) Determine the objective level(s) in any one of the three learning domains (cognitive, psychomotor, and affective) corresponding to the teaching objectives. Each objective should correspond to the objective level(s) of ONLY ONE of the three domains.				
(II) If more than one objective levels are applicable for each learning domain, select the highest one only. (For example, if the objective levels for Cognitive Domain include C3, C5, and C6, select C6 only and fill it in the boxes below. The same rule applies to Psychomotor Domain and Affective Domain.)				
(III) Determine the core competences that correspond to each teaching objective. Each objective may correspond to one or more core competences at a time. (For example, if one objective corresponds to three core competences: A, AD, and BEF, list all of the three in the box.)				

Teaching objectives		Relevance	
		Objective Levels	Core Competences
Students could understand transportation engineering at an introductory level.		C2	BF
Students could discover transportation- related issues in daily life.		C2	BF
Classroom knowledge could match practical planning and design procedures.		C2	BF
<b>Teaching Objectives, Teaching Methods and Assessment</b>			
Teaching Objectives		Teaching Methods	Assessment
Students could understand transportation engineering at an introductory level.		Lecture, discussion, and video critique	Written exams and assignments
Students could discover transportation-related issues in daily life.		Lecture, discussion, and video critique	Written exams and assignments
Classroom knowledge could match practical planning and design procedures.		Lecture, discussion, and video critique	Written exams and assignments
This course has been designed to cultivate the following essential qualities in TKU students.			
Essential Qualities of TKU Students		Description	
<input type="checkbox"/> global perspectives			
<input type="checkbox"/> a vision for the future			
<input type="checkbox"/> information literacy			
<input type="checkbox"/> ethical and moral principles			
<input type="checkbox"/> independent thinking			
<input type="checkbox"/> an awareness of healthy living			
<input checked="" type="checkbox"/> effective teamwork			
<input type="checkbox"/> an appreciation of the arts			
<b>Course Schedule</b>			
Week	Date	Subject/Topics	Note
1	102/02/18-102/02/24	Introduction: railways, airport, and harbor engineering	
2	102/02/25-102/03/03	TKU Marine Museum (tentative)	
3	102/03/04-102/03/10	Railway terminology	
4	102/03/11-102/03/17	Railway alignment and traction	
5	102/03/18-102/03/24	Railway track and locomotive	
6	102/03/25-102/03/31	Railway turnout, switch work, and siding	
7	102/04/01-102/04/07	No class (Spring break)	
8	102/04/08-102/04/14	Railway station and depot	
9	102/04/15-102/04/21	Railway traffic control and signaling	
10	102/04/22-102/04/28	Midterm Exam Week	
11	102/04/29-102/05/05	Airport master plan	
12	102/05/06-102/05/12	Runway and taxiway planning	
13	102/05/13-102/05/19	Airport terminal planning	

14	102/05/20-102/05/26	Air traffic control	
15	102/05/27-102/06/02	Harbor planning and layout	
16	102/06/03-102/06/09	Port facilities	
17	102/06/10-102/06/16	No class (National holiday)	
18	102/06/17-102/06/23	Final Exam Week	
Requirement	Prerequisite: Transportation Engineering (I) in the first semester		
Teaching Facility	<input checked="" type="checkbox"/> Computer <input checked="" type="checkbox"/> Overhead Projector <input type="checkbox"/> Other ( _____ )		
Textbook(s)	Lecture notes and Wiki articles		
Suggested Readings	1. P. H. Wright, N. J. Ashford, Transportation Engineering: Planning and Design, 3 <sup>rd</sup> Ed, John Wiley & Sons, 1989; 2. Yi-hwa Zhou, Transportation Engineering, 6 <sup>th</sup> Ed, Hwa-Tai Publishing, 2007; 3. Wikipedia; 4. Internet materials.		
Number of Assignment(s)	3 (Filled in only for those courses that apply)		
<b>Grading Policy</b>	Attendance: 10%                      Assignment: 30% Mid-term exam: 30%              Final exam: 30%		
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at <a href="http://info.ais.tku.edu.tw/csp">http://info.ais.tku.edu.tw/csp</a> or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at <a href="http://www.acad.tku.edu.tw/index.asp">http://www.acad.tku.edu.tw/index.asp</a> . <b>※Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</b>		

Form No. : ATRX-Q03-001-FM201-05