

Tamkang University Academic Year 102, 1st Semester Course Syllabus

Course Title	TRANSPORTATION ENGINEERING	Instructor	CHIH-LIN CHUNG
Course Class	TLTXB2B DEPARTMENT OF TRANSPORTATION MANAGEMENT, 2B	Details	<ul style="list-style-type: none"> ◆ Required ◆ 1st Semester ◆ 2 Credits
D e p a r t m e n t a l t e a c h i n g o b j e c t i v e s			
<p>I. To obtain professional transportation knowledge.</p> <p>II. To familiarize with execution of transportation practices.</p> <p>III. To master oral expression and teamwork.</p> <p>IV. To capture basic skills of system analysis.</p> <p>V. To emphasize professional transportation ethics.</p>			
D e p a r t m e n t a l c o r e c o m p e t e n c e s			
<p>A. To obtain basic knowledge of transportation management.</p> <p>B. To familiarize with practice-oriented professional skills.</p> <p>C. To be capable of oral expression and teamwork.</p> <p>D. To obtain basic ability of system analysis.</p> <p>E. To build transportation ethics, care for humanity, and global visions.</p>			
Course Introduction	<p>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 this semester highlights the first three parts and Transportation Engineering (II) in next semester will introduce the remainder three parts. This course is designed for undergraduates at their sophomore years.</p>		

The Relevance among Teaching Objectives, Objective Levels and Departmental core competences

I.Objective Levels (select applicable ones) :

- (i) Cognitive Domain : C1-Remembering, C2-Understanding, C3-Applying,
C4-Analyzing, C5-Evaluating, C6-Creating
- (ii) Psychomotor Domain : P1-Imitation, P2-Mechanism, P3-Independent Operation,
P4-Linked Operation, P5-Automation, P6-Origination
- (iii) Affective Domain : A1-Receiving, A2-Responding, A3-Valuing,
A4-Organizing, A5-Charaterizing, A6-Implementing

II.The Relevance among Teaching Objectives, Objective Levels and Departmental core competences :

- (i) Determine the objective level(s) in any one of the three learning domains (cognitive, psychomotor, and affective) corresponding to the teaching objective. 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 Departmental core competences that correspond to each teaching objective. Each objective may correspond to one or more Departmental core competences at a time. (For example, if one objective corresponds to three Departmental core competences: A,AD, and BEF, list all of the three in the box.)

No.	Teaching Objectives	Relevance	
		Objective Levels	Departmental core competences
1	Students could understand transportation engineering at an introductory level.	C2	ABCD
2	Students could discover related issues in daily life.	C2	ABCD
3	Classroom knowledge could match practical planning and design procedures.	C2	ABCD

Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	Students could understand transportation engineering at an introductory level.	Lecture, Discussion, Appreciation	Written test, Participation, Assignment
2	Students could discover related issues in daily life.	Lecture, Discussion, Appreciation	Written test, Participation, Assignment
3	Classroom knowledge could match practical planning and design procedures.	Lecture, Discussion, Appreciation	Written test, Participation, Assignment

This course has been designed to cultivate the following essential qualities in TKU students

Essential Qualities of TKU Students	Description
◇ A global perspective	Helping students develop a broader perspective from which to understand international affairs and global development.
◇ Information literacy	Becoming adept at using information technology and learning the proper way to process information.
◇ A vision for the future	Understanding self-growth, social change, and technological development so as to gain the skills necessary to bring about one's future vision.
◇ Moral integrity	Learning how to interact with others, practicing empathy and caring for others, and constructing moral principles with which to solve ethical problems.
◆ Independent thinking	Encouraging students to keenly observe and seek out the source of their problems, and to think logically and critically.
◇ A cheerful attitude and healthy lifestyle	Raising an awareness of the fine balance between one's body and soul and the environment; helping students live a meaningful life.
◇ A spirit of teamwork and dedication	Improving one's ability to communicate and cooperate so as to integrate resources, collaborate with others, and solve problems.
◇ A sense of aesthetic appreciation	Equipping students with the ability to sense and appreciate aesthetic beauty, to express themselves clearly, and to enjoy the creative process.

Course Schedule

Week	Date	Subject/Topics	Note
1	102/09/16~ 102/09/22	Introduction to Transportation Engineering	
2	102/09/23~ 102/09/29	Decision Making	
3	102/09/30~ 102/10/06	Project Evaluation	
4	102/10/07~ 102/10/13	Geography and Networks (Assignment 1)	
5	102/10/14~ 102/10/20	Modeling	
6	102/10/21~ 102/10/27	Trip Generation	
7	102/10/28~ 102/11/03	Destination Choice	
8	102/11/04~ 102/11/10	Mode Choice	
9	102/11/11~ 102/11/17	Route Choice (Assignment 2)	
10	102/11/18~ 102/11/24	Midterm Exam Week	
11	102/11/25~ 102/12/01	Introduction to Highway Engineering	
12	102/12/02~ 102/12/08	Grade	

13	102/12/09 ~ 102/12/15	Sight Distance	
14	102/12/16 ~ 102/12/22	Horizontal Curves-1	
15	102/12/23 ~ 102/12/29	Horizontal Curves-2 (Assignment 3)	
16	102/12/30 ~ 103/01/05	Vertical Curves	
17	103/01/06 ~ 103/01/12	Conclusions and Review	
18	103/01/13 ~ 103/01/19	Final Exam Week	
Requirement	Read the Moodle materials before each class. If you are not interested in English, you should choose 2A's Transportation Engineering.		
Teaching Facility	Computer, Projector		
Textbook(s)	Fundamentals of Transportation, Wikibooks, http://en.wikibooks.org/wiki/Fundamentals_of_Transportation .		
Reference(s)	1. Khisty and Lall, Transportation Engineering: An Introduction, Third Edition, Prentice-Hall, 2003. 2. Online materials.		
Number of Assignment(s)	3 (Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : 10.0 % ◆ Mark of Usual : 30.0 % ◆ Midterm Exam : 30.0 % ◆ Final Exam : 30.0 % ◆ Other < > : %		
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php . ※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.		