Tamkang University Academic Year 104, 1st Semester Course Syllabus

Course Title	TRANSPORTATION ENGINEERING	Instructor	CHIH-LIN CHUNG
Course Class	TLTXB2B DEPARTMENT OF TRANSPORTATION MANAGEMENT, 2B	Details	◆ Required ◆ One Semester ◆ 3 Credits

Departmental Aim of Education

Ⅰ. To obtain professional transportation knowledge.

Ⅱ. To familiarize with execution of transportation practices.

Ⅲ. To master oral expression and teamwork.

Ⅳ. To capture basic skills of system analysis.

Ⅴ. To emphasize professional transportation ethics.

Departmental core competences

A. To obtain basic knowledge of transportation management.

B. To familiarize with practice-oriented professional skills.

C. To be capable of oral expression and teamwork.

D. To obtain basic ability of system analysis.

E. To build transportation ethics, care for humanity, and global visions.

Course Introduction	This course introduces transportation engineering-related concepts and guidelines, covering four parts as 1) Transportation Engineering Introduction, 2) Highway Engineering, 3) Railway Engineering, and 4) Airport Engineering. This course is designed for undergraduates at their sophomore years.

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	AD
2	Students could discover related issues in daily life.	C2	AD
3	Classroom knowledge could match practical planning and design procedures.	C2	AD

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	104/09/14 ~ 104/09/20	Introduction	
2	104/09/21 ~ 104/09/27	Decision Making	
3	104/09/28 ~ 104/10/04	Geography and Network	
4	104/10/05 ~ 104/10/11	Project Evaluation	
5	104/10/12 ~ 104/10/18	Highway Engineering Introduction	
6	104/10/19 ~ 104/10/25	Grade	
7	104/10/26 ~ 104/11/01	Sight Distance	
8	104/11/02 ~ 104/11/08	Horizontal Curve	
9	104/11/09 ~ 104/11/15	Vertical Curve and Railway Engineering Introduction	
10	104/11/16 ~ 104/11/22	Midterm Exam Week	
11	104/11/23 ~ 104/11/29	Off-campus Field Trip; Railway Alignment and Train	
12	104/11/30 ~ 104/12/06	Railway Track, Turnout, Switch Work & Siding	

13	104/12/07 ~ 104/12/13	Rail Station and Depot	
14	104/12/14 ~ 104/12/20	Airport Engineering Introduction and Master Plan	
15	104/12/21 ~ 104/12/27	Runway and Taxiway Planning	
16	104/12/28 ~ 105/01/03	Airport Terminal Planning	
17	105/01/04 ~ 105/01/10	Airport Ground Transportation	
18	105/01/11 ~ 105/01/17	Final Exam Week	

Requirement	本課程課堂講授語言為英文。 本科目分別開設中文班(2A)與英文班(2B), 對英語有興趣的同學歡迎跨B班修課, B班修課人數上限為50人, 名額有限。
Teaching Facility	Computer, Projector
Textbook(s)	1. Lecture notes. 2. 周義華, 運輸工程, 華泰文化出版. 3. Fundamentals of Transportation, Wikibooks (http://en.wikibooks.org/wiki/Fundamentals_of_Transportation)
Reference(s)	Internet data and publications.
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual：40.0 % ◆ Midterm Exam： 25.0 % ◆ Final Exam： 25.0 % ◆ 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.**