Tamkang University Academic Year 111, 2nd Semester Course Syllabus

Course Title	OPERATIONS RESEARCH	Instructor	CHEN CHUN YING
Course Class	TLTXB3B DEPARTMENT OF TRANSPORTATION MANAGEMENT, 3B	Details	◆ General Course ◆ Required ◆ 2nd Semester
Relevance to SDGs	SDG9 Industry, Innovation, and Infrastructure		

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.

Subject Departmental core competences

A. To obtain basic knowledge of transportation management.(ratio:40.00)

B. To familiarize with practice-oriented professional skills.(ratio:10.00)

C. To be capable of oral expression and teamwork.(ratio:5.00)

D. To obtain basic ability of system analysis.(ratio:40.00)

E. To build transportation ethics, care for humanity, and global visions.(ratio:5.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:5.00)

2. Information literacy. (ratio:30.00)

3. A vision for the future. (ratio:15.00)

4. Moral integrity. (ratio:5.00)

5. Independent thinking. (ratio:30.00)

6. A cheerful attitude and healthy lifestyle. (ratio:5.00)

7. A spirit of teamwork and dedication. (ratio:5.00)

8. A sense of aesthetic appreciation. (ratio:5.00)

Course Introduction	This is a theoretical course. It is to instruct students to have decision-making analysis skills. The content includes network model, dynamic programming, integer programming, and queueing theory. This course can lay the foundation for students to conduct related research in the future.

The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.
II.Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.
III.Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	Students are expected to have an understanding of the relevant theories of Operations Research.	Cognitive

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCDE	12345678	Lecture	Testing, Report(including oral and written)

Course Schedule

Week	Date	Course Contents	Note
1	112/02/13 ~ 112/02/19	1.Introduction	
2	112/02/20 ~ 112/02/26	2.Shortest Path Problem	
3	112/02/27 ~ 112/03/05	3.Minimum Spanning Trees & Maximum Flows	
4	112/03/06 ~ 112/03/12	3.Minimum Spanning Trees & Maximum Flows	
5	112/03/13 ~ 112/03/19	4.The Minimum Cost Flow Problem & Network simplex	
6	112/03/20 ~ 112/03/26	4.The Minimum Cost Flow Problem & Network simplex	

7	112/03/27 ~ 112/04/02	5.PERT & CPM	
8	112/04/03 ~ 112/04/09	5.PERT & CPM	
9	112/04/10 ~ 112/04/16	Midterm Presentation	
10	112/04/17 ~ 112/04/23	Midterm Exam Week	
11	112/04/24 ~ 112/04/30	6.Dynamic Programming	
12	112/05/01 ~ 112/05/07	7.Integer Programming	
13	112/05/08 ~ 112/05/14	8.Solution Method for Integer Programming	
14	112/05/15 ~ 112/05/21	8.Solution Method for Integer Programming	
15	112/05/22 ~ 112/05/28	9.Queueing Theory	
16	112/05/29 ~ 112/06/04	Final Presentation I	
17	112/06/05 ~ 112/06/11	Final Presentation II	
18	112/06/12 ~ 112/06/18	Final Exam Week	

Requirement	
Teaching Facility	Computer, Projector
Textbooks and Teaching Materials	Hillier, F.S. ; G. J. Lieberman, Introduction to Operations Research;
References	喻奉天譯，作業研究第十版，東華書局。 廖慶榮，作業研究2版，華泰文化。
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual： % ◆ Midterm Exam： 30.0 % ◆ Final Exam： 30.0 % ◆ Other〈Term paper〉：30.0 %
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.**