

 國立東華大學
教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	輸配送管理			學年/學期 Academic Year/Semester	103/1
課程名稱(英文) Course Name in English	Transportation and Distribution Management				
科目代碼 Course Code	GSLM51600	系級 Department & Year	碩士	開課單位 Course-Offering Department	運籌管理研究所
修別 Type	必修 Required	學分數/時間 Credit(s)/Hour(s)		3.0/3.0	
授課教師 Instructor	/溫日華				
先修課程 Prerequisite					
課程描述 Course Description					
Transportation and distribution are two important logistics functions with many operational problems. As a result, over the years, many models and solution methods have been developed for such operational problems. To help students understand such operational problems, the course covers the standard problems in these two logistics functions, including distribution network design, facility location selection, and routing and scheduling. The emphasis is on the modeling aspects of the problems, leaving the solution methods for the models to later technical courses					
課程目標 Course Objectives					
介紹整體面運輸營運內外環境與運輸營運策略					
系專業能力 Basic Learning Outcomes					課程目標與系專業能力相關性 Correlation between Course Objectives and Dept.' s Education Objectives
A	基礎運籌、供應鏈管理知識 Foundations on logistics and supply chain management				○
B	運籌系統管理知識 Knowledge on logistics system management				●
C	運籌工具方法知識 Knowledge on analytical tools and methodologies in logistics				●
D	語文表達能力 Language and communication skills				○
圖示說明Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated					
授課進度表 Teaching Schedule & Content					
週次Week	內容 Subject/Topics				備註Remarks
1	Overview of Modeling Overview of Network-Based Models Assignment Problems				Ch 1 of [7] Sect 5.1.4 of [7], Ch 2 of [1] Sect 5.3.2 of [7]
2	Transportation Problems Transshipment Problems				Sect 5.3.1 of [7] Sect 5.3.3 of [7]
3	Minimum Cost Flow Problems				Sect 5.3.4, 12.19, 12.20 of [7]
4	Maximum Flow Through a Network Set Covering Problems				Sect 5.3.6 of [7] Sect 9.5.1 of [7]

5	Set Packing Problems Set Partitioning Problems	Sect 9.5.2 of [7] Sect 9.5.3 of [7]
6	The Knapsack Problem The Quadratic Assignment Problem	Sect 9.5.4 of [7] Sect 9.5.7, 12.10 of [7]
7	The Travelling Salesman Problem	Sect 9.5.5, 12.23, 12.27 of [7]
8	The Vehicle Routing Problem	Sect 9.5.6, 12.23, 12.27 of [7] Ch 1 of [6]
9	期中考試週 Midterm Exam	
10	Sports Day	
11	Routing in City Logistics Street Routing and Scheduling Problem	Ch 8 of [3] Ch 12 [5]
12	Uncapacitated and Capacitated Facility Location Problems	Ch 2 of [4]
13	Median Problems in Networks	Ch 3 of [4]
14	Covering Problems	Ch 6 of [4]
15	Hub Location Problems The Location of Interacting Facilities	Ch 12 of [4]
16	Air Crew Scheduling	Ch 14 of [5]
17	Airline Planning and Schedule Development	Ch 2 of [4]
18	期末考試週 Final Exam	

教 學 策 略 Teaching Strategies

- ☒ 課堂講授 Lecture
 ☐ 分組討論 Group Discussion
 ☐ 參觀實習 Field Trip
☐ 其他 Miscellaneous:

學期成績計算及多元評量方式 Grading & Assessments

配分項目 Items	配分比例 Percentage	多元評量方式 Assessments							
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定	其他
平時成績 General Performance									
期中考成績 Midterm Exam	20%	✓							
期末考成績 Final Exam				✓	✓				
作業成績 Homework and/or Assignments	30%						✓		
其他 Miscellaneous (Project)	50%			✓	✓				

評量方式補充說明

Grading & Assessments Supplemental instructions

The course emphasizes the understanding of models such that in general there is no computation in all modes of assessments. Both the mid-term and the project are on presentation. In the mid-term, students are required to present a paper, including a small numerical example of the model of the paper. In the project, students basically repeat the similar process as in the mid-term except that for the project their studies should be based on several related papers.

教科書與參考書目 (書名、作者、書局、代理商、說明)
Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

The following books are available in the library. Some even have online versions to download.

- [1] Ahuja, R.K., T.L. Magnanti, and J.B. Orlin (1993) Network Flows Theory, Algorithms, and Applications, Prentice Hall.
- [2] Barnhart, C., and B. Smith (editor) (2012) Quantitative Problem Solving Methods in the Airline Industry, Spring.
- [3] Ehmke, J.F. (2012) Integration of Information and Optimization Models for Routing in City Logistics, Chapter 8 Routing in City Logistics, Springer.
- [4] Eiselt, H.A., and V. Marianov (editor) (2011) Foundations of Location Analysis, Springer.
- [5] Hall, R. (2003) Handbook of Transportation Science, Springer.
- [6] Paolo, P., and D. Vigo (editor) (2001) The Vehicle Routing Problem, SIAM.
- [7] Williams, H. Paul (2013) Model Building in Mathematical Programming, 5th ed., John Wiley & Sons.

課程教材網址 (教師個人網址請列在本校內之網址)
Teaching Aids & Teacher's Website (Personal website can be listed here.)

<http://faculty.ndhu.edu.tw/~ywan/courses/GSLM51600%20Transportation%20and%20Distribution%20Management.html>

其他補充說明 (Supplemental instructions)