國立成功大學 工資管所

一百一十三學年度第二學期授課大綱（進度）

課程名稱：網路最佳化管理
zuvio code: 13102227

授課教師： 王逸琳 I-Lin Wang
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課程網頁 請至 http://moodle.ncku.edu.tw/ 註冊
Teams 連結 （線上直播用： 需用 XXXX@off365.ncku.edu.tw 登入，XXXX 為學號）

開課班級： 工資管所碩博

教學時地： 授課：一 7~9 [61204] Office hr:四 2~3 [61324] or by appointment

教學目標： Train students to learn network optimization and algorithms

課程簡介： We will first introduce the foundations of graphs and algorithms, then go over each topic of network optimization.

教 科 書： Network Flows: Theory, Algorithms, and Applications by R. K. Ahuja, T. L. Magnanti, and J. B. Orlin, 1993, Prentice Hall, NJ. ISBN: 0-13-617549-X.

參考書籍：
1. Introduction to Linear Optimization, by Bertsimas and Tsitsiklis, 1997, Athena Scientific, ISBN: 1-886529-19-1
2. Combinatorial Optimization, by Papadimitriou and Steiglitz, 1998, Dover Pubns, ISBN: 0486402584
3. Network Optimization: Continuous and Discrete Models, 1998, Athena Scientific, ISBN: 1-886529-02-7
4. Linear Programming and Network Flows, 2nd Edition, by M.S. Bazaraa, J. J. Jarvis, and H.D. Sherali, John Wiley, ISBN: 0-471-63681-9

評分方式：

1.	Quiz (2 times: **03/10**, **04/21**, each time **10%**)	**20%**
2.	Midterm Papers Presentation (decided by **03/04**, submit by **04/08**, present after **04/08**)	**15%**
3.	Final Exam (**06/02**)	**25%**
4.	Homework (including programming assignments or projects)	**35%**
5.	Class Participation	**5%**

先修課程： Know how to program and some logic

對學生建議事項：
1. Each student has to present some academic papers related with this course
2. The computer program can be written by C or C++, and should run on unix environment (cygwin, Sun, Linux, or BSD)

預計進度：(18 週)
1. 02/17 Introduction, Applications
2. 02/24 Data Structure, Graph Search
3. 03/03 Decomposition
4. 03/10 1st Quiz ; 2 paper report (2pa)
5. 03/17 Shortest Path: Label-Setting Algorithms
6. 03/24 Shortest Path: Label-Correcting Algorithms, DLU
7. 03/31 Shortest Path: SLU
8. 04/07 Shortest Path: SLU
9. 04/14 Midterm paper report (mpa)
10. 04/21 2nd Quiz
11. 04/28 Max Flow: augmenting path
12. 05/05 Max Flow: preflow-push, proportional augmenting
13. 05/12 Max Flow: preflow-push, proportional augmenting
14. 05/19 Min-cost Flow: Network Simplex Algorithms
15. 05/26 Min-cost Flow: Network Simplex Algorithms
16. 06/02 Final exam (Final project)
17. 06/09 Lagrangian Relaxation
18. 06/16 Multicommodity Network Flows

附註： 對於以上內容或修課要求，授課老師可依實際修課情況加以修改。
詳細的評分標準請看「修課作業要求」。