時間: Wed 2:15 PM – 5:00 PM	**教師:** 林耀鈴 (http://www.cs.pu.edu.tw/~yawlin)
地點: 管316	**辦公室:** 管417 (右門)
Office Hours: Mon 8:20 – 11:59 AM	**電話:** 2632-8001 ext 13403

教科書: C.L. Liu, *Introduction to Combinatorial Mathematics*, McGraw-Hill, Inc. 1968.
參考書: R.P. Grimaldi, *Discrete and Combinatorial Mathematics*, 3rd Ed., Addison-Wesley, 1994.
參考書: Kenneth H. Rosen, *Discrete Mathematics and its Applications, 4th Ed.*, McGraw-Hill, Inc. 1999.

This is an introductory course of combinatorial theory, which is a fascinating branch of mathematics with numerous applications in engineering, the physical sciences, the social sciences, economies, and operations research. Four important themes are interwoven in the course: enumerative analysis, theory of graphs, optimization techniques, and design of experiments. Topics included in this course are permutations and combinations, generating functions, recurrence relations, the principle of inclusion and exclusion, Pólya's theory of counting, the fundamental theory of graphs, planar and dual graphs, and graphs coloring.

評分標準: Grades will be assigned based on the following formula, with cut-offs determined by my opinion of students on the boundary.

> 4 Homeworks — 32%
> Midterm — 28%
> Final Exam — 40%

課程進度概要:

日期	主題	章節	作業
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02/12	Permuations and Combinations	1	
02/19	Permuations and Combinations	1	
02/26	Generating Functions I	2	HW1 out (1,2)
03/05	Generating Functions II	2	
03/12	Recurrence Relations I	3	HW1 in
03/19	Recurrence Relations II	3	HW2 out (3,4)
03/26	Inclusion and Exclustion I	4	
04/02	春假		
04/09	Inclusion and Exclustion II	4	HW2 in
04/16	期中考		Midterm (1-4)
04/23	Polya's Theory I	5	
04/30	Polya's Theory II	5	HW3 out (5)
05/07	Polya's Theory III	5	
05/14	Graphs I	6	HW3 in
05/21	Graphs II	6	HW4 out (6,8)
05/28	Planar Graphs	8	
06/04	端午節		
06/11	Graph Numbers	9	HW4 in
06/18	期末考		