開 授 課 程 大 綱

開課單位系所	清華大學/統計所				
課　　號	STAT 6682	班 次		學 分	3
名　　稱	電腦實驗專題 (Topics on Computer Experiments)				
授 課 教 師	鄭少為 (清華大學/統計所)				

一. 內容：

This is an advance course in experimental design. The course is designed especially for students who already have a solid background in design of experiments. The computer has become an increasingly popular tool to simulate physical phenomena. A computer experiment uses a computer code to make inferences about some underlying system. This course will introduce experimental design, statistical modeling, and analysis strategies that have been developed specifically for treating data generated from complex computer codes. Topics include Gaussian random field, Kriging, other modeling methods, experimental design including space-filling and criterion-based designs, optimization algorithms, and sensitivity analysis.

二. 教科書：

Textbook: Santner, T.J., Williams, B.J., and Notz, W.I. (2003), *The Design and Analysis of Computer Experiments*, Springer.

三. 成績評量方式：

If time allows, your grade will be determined by two paper presentations (60%) and one project presentation (40%) on the topics that will be posted in the future. Each oral presentation will be given by one student, unless the topic is very difficult, in which case two students can split the work. Each presentation should last 30-40 minutes. It should be given using slides created in the electronic format of your choice so that we can archive the presentations for future reference.

四. Course webpage: TBA

五. Prerequisites：Linear Model (STAT 5410) and Design and Analysis of Experiments (STAT 5510)