

數學系課程核心教材內容

課程名稱：(中文) 近似理論專題 (英文) Weakly empirical processes			開課單位	統科碩士班
			課程代碼	2317821
學分數	2	必/選修	選修	開課年級
碩博合開				
<p>教學目標：</p> <p>It is well-known that under certain conditions, an empirical measure uniformly converges to a given probability distribution. The theory of empirical process provides the rate of this convergence. The goal of this course is to introduce statisticians with a background in mathematical statistics to empirical processes and semi-parametric inference.</p> <p>課程概述：</p> <p>The course consists of three parts. The first part is an overview which concisely covers the basic concepts in both empirical processes and semi-parametric inference, while avoiding many technicalities. The second part is devoted to empirical processes, while the third part is to provide additional tools of empirical processes for semi-parametric efficiency and inference.</p> <p>先修科目或先備能力：Mathematical statistics at least in a master level</p>				
建議參考書目	<p>Cox, D.R. and Hinkley, D.V. <i>Theoretical Statistics</i>, Chapman and Hall, 1974.</p> <p>Kosorok, M. <i>Introduction to Empirical Processes and Semiparametric Inference</i>, Springer, 2008.</p>			

課程大綱

單元主題	內容綱要	上課週數
Introduction	An overview of empirical processes and semi-parametric inference, some examples from linear regression and counting poisson regression.	5
Empirical Process	Metric spaces, stochastic process in metric spaces, general theory for weak convergence.	6
Additional Results	Bootstrapping empirical processes, functional de lta method, Z-estimator, M-estimator.	5