Course Description

Department of Mathematics

Nature of the course ☐ required ■ elective	Area 麻煩老師勾選類別，或直接填寫＿＿＿＿＿＿＿＿＿＿。 ☐代數與數論 ☐分析 ☐幾何與拓樸 ☐計算與應用數學 ☐機率 ■統計 ☐離散數學 ☐其他 ☐論文研討、獨立研究				
Course number	免填	Section number		Number of credits	
Course title	（中文）統計推論專題 （英文）Topics on Statistical Inference				
Instructor	Yi-Ching Yao				

I. Contents：

Discrete-time Markov models, recurrence and ergodicity, long run behavior, Lyapunov functions and martingales, eigenvalues and nonhomogeneous Markov chains, Gibbs fields and Monte Carlo simulations, inference for Markov random fields, importance sampling, continuous-time Markov models, queues.

II. Course prerequisite：Calculus, Elementary Probability Theory

III. Reference material (textbook(s))：

P. Bremaud (1999): Markov Chains: Gibbs Fields, Monte Carlo Simulation, and Queues.

IV. Grading scheme：Oral presentation

V. Course Goal：This course intends to help students learn theory of Markov chains and applications including Markov chain Monte Carlo simulation.

教師簽名： _姚怡慶_____