COURSE OUTLINE

I INTRODUCTION :

Statistical model, statistical problems, estimators, comparison of estimators.

II UNBIASED ESTIMATION :

Unbiased estimator, efficient estimator, Cramer-Rao efficiency bound, best unbiased estimator, best linear unbiased estimator (linear model, OLS, GLS).

III MAXIMUM LIKELIHOOD METHOD :

The principle, finite sample properties, examples, numerical algorithm for likelihood optimisation, asymptotic properties.

IV GENERALIZED METHOD OF MOMENTS :

Moment restrictions, instrumental variables, examples (error in variable, rational expectation, simultaneous equation model, intertemporal optimization...), moment estimators, optimal moment.

The course will be illustrated by a lot of econometric models including.

linear regression

nonlinear regression

logit model, probit model

duration model

Poisson regression

autoregressive process

ARCH process

seemingly unrelated regression

simultaneous equation model

disequilibrium model

Tobit model

model defined by Euler restrictions (CCAPM)

survey sampling.