



**Economic Research
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A Training Workshop on Nonparametric Methods

**Tuesday 3 November – 7 November 2008
University of Pretoria**

ERSA is pleased to announce a 5 day training workshop on Nonparametric Methods.

The workshop will be led by Professor Jeffrey S. Racine (Senator William McMaster Chair in Econometrics, McMaster University, Canada).

All attendees are expected to have a background in Mathematics and Probability and to have taken courses in Advanced Econometric Methods including Multivariate Regression and Inference up to the level of Greene or Wooldridge. Formally, no previous knowledge of Nonparametric Estimation is required.

ERSA will provide financial support to cover travel and accommodation expenses of participants. However, places are limited and will be allocated on a first-come first-served basis.

Please email both Tania Jacobs (tania.jacobs@uct.ac.za) and Steven Koch (steve.koch@up.ac.za) if you would like to attend the course. The deadline for applications is **Tuesday 30th September 2008**.

Course Description:

The following outlines potential material to be covered in five three-hour lectures. Both simulated and actual data will be used to illustrate the methods based on the R np package.

Lecture 1: Kernel density estimation

- (i) Density function estimation
- (ii) Distribution function estimation
- (iii) Probability function estimation
- (iv) An introduction to R

Lecture 2: Kernel regression

- (i) Local constant kernel regression and derivative estimation
- (i) Properties, bandwidth selection, assessing fit, assessing variability
- (ii) Local linear kernel regression and derivative estimation
- (iii) Properties, bandwidth selection

Lecture 3: Kernel regression continued

- (i) Testing for irrelevant regressors
- (ii) Comparing parametric and nonparametric models
- (i) Out-of-sample performance
- (ii) Testing for correct parametric model specification

Lecture 4: Semiparametric regression

- (i) Partially linear regression
- (ii) Varying coefficient models
- (iii) Index models - Ichimura's method

Lecture 5: Semiparametric regression, nonparametric probability models, and topics in applied nonparametric methods

- (i) Index models - Klein & Spady's method
- (ii) Nonparametric probability models
- (iii) Nonparametric quantile methods
- (iv) Treatment Effects