

- Faculté des sciences économiques
- [www.unine.ch/seco](http://www.unine.ch/seco)

## Advanced Regression methods (5ST2003)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
<b>Master en sciences économiques, orientation politique économique</b>	<b>Cours: 2 ph TP: 2 ph</b>	<b>cont. continu</b>	6
<b>Master en statistique</b>	<b>Cours: 2 ph TP: 2 ph</b>	<b>cont. continu</b>	6

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

### Période d'enseignement:

- Semestre Automne

### Equipe enseignante:

Prof. Catalin Starica, Institut de Statistique  
Pierre-à-Mazel 7, CH-2000 NEUCHÂTEL  
Office phone: +41 (0) 32 718 14 52 - Email: [catalin.starica@unine.ch](mailto:catalin.starica@unine.ch)

Jian Kang, PhD. Candidate in Statistics, Institute of Statistics  
Pierre-à-Mazel 7, CH-2000 NEUCHÂTEL  
Office phone:+4132 718 1531 - Email: [jian.kang@unine.ch](mailto:jian.kang@unine.ch)

### Objectifs:

- To further the capacity of the students to use linear regression as a tool for empirical analysis
- To introduce students to topics that reflect the best of contemporary econometrics
- To teach students how to assess the validity of empirical analysis presented to them by organizing each methodological topic around an important real-world question
- considering alternative specifications for the same data set as a way to assess whether their substantive findings are robust
- systematically addressing the various threats to validity of the analysis

### Contenu:

1. Review of probability and statistics
  2. Linear regression with one regressor
  3. Linear regression with multiple regressors
  - (4. Regression with panel data)
  - (5. Instrumental variable regression)
  - (6. Regression with a binary dependent variable)
- (if time permits)

### Forme de l'évaluation:

ES/TP/P: 2-hour final written exam during the last week of the semester (60% of the grade), quizzes, exercises and projects (30% of the grade), class participation (10% of the grade.)  
Reexamination session (September) : 2h written test

### Documentation:

J. Stock and M. Watson, Introduction to Econometrics, second edition, Pearson, 2007.

### Pré-requis:

knowledge of probability, statistical inference, linear algebra, multivariate calculus

### Forme de l'enseignement:

- 6 ECTS credits
- Compulsory course for the master in statistics
- Fall Semester
- Learning activities: 2 hours lectures/presentations, 2 hours exercises per week. The students will actively participate in the presentation and explanation of the concepts involved.

- Faculté des sciences économiques
- [www.unine.ch/seco](http://www.unine.ch/seco)

**Advanced Regression methods (5ST2003)**