**Scheda insegnamento**

**Modulo di “Modelli a variabile latente per dati cross-section e longitudinali” / “Latent variable models for cross-section and longitudinal data”**

|  |  |  |
| --- | --- | --- |
|  | **Italiano** | **English** |
| **Docente/Instructor** | Silvia Pandolfi | Silvia Pandolfi |
| **Titolo/Title** | Modelli a variabile latente per dati cross-section e longitudinali | Latent variable models for cross-section and longitudinal data |
| **Contenuti/Contents** | * Concetti di base su modelli a variabile latenti * Stima tramite algoritmo EM * Generalized Linear Mixed Models * Modello a classi latenti * Latent Growth model * Latent Markov model * Il pacchetto LMest per R | * Basic concepts on latent variable models * Estimation via EM algorithm * Generalized Linear Mixed Models * Latent class model * Latent Growth model * Latent Markov model * Il pacchetto LMest per R |
| **Metodologia/Method** | * Analisi teorica * Discussione di papers * Discussioni in classe o realizzazione lavori individuali | * Theoretical analysis * Discussion of scientific papers * In class discussion or individual assignments |
| **N. Ore/ N. hours** | **10** | **10** |
| **Mese/Month\*** | **Febbraio** | **Febbraio** |
| **Curriculum** | - QME | - QME |
| **Testi di riferimento/ Suggested readings** | Bartolucci, Francesco, Alessio Farcomeni, and Fulvia Pennoni. *Latent Markov models for longitudinal data*. Chapman and Hall/CRC, 2012.  Zucchini, Walter, Iain L. MacDonald, and Roland Langrock. *Hidden Markov models for time series: an introduction using R*. Chapman and Hall/CRC, 2016.  Bartolucci, Francesco, Silvia Pandolfi, and Fulvia Pennoni. "LMest: an R package for latent Markov models for longitudinal categorical data." *J Stat Softw* (2017). | Bartolucci, Francesco, Alessio Farcomeni, and Fulvia Pennoni. *Latent Markov models for longitudinal data*. Chapman and Hall/CRC, 2012.  Zucchini, Walter, Iain L. MacDonald, and Roland Langrock. *Hidden Markov models for time series: an introduction using R*. Chapman and Hall/CRC, 2016.  Bartolucci, Francesco, Silvia Pandolfi, and Fulvia Pennoni. "LMest: an R package for latent Markov models for longitudinal categorical data." *J Stat Softw* (2017). |

\* For details, please, refer to the calendar available at <http://dottorato.ec.unipg.it/it/>