

# From Frailty to Multiprocess Models

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PhD School, XXIX cycle

## Course Description

This course provides an introduction to Survival models with random effects (frailty models) and extend them to cases in which multiple processes need to be estimated simultaneously. This extension brings about several computational and identification issues. A comprehensive understanding of these issues and the ways they should be tackled, also by means of practical examples.

## Objectives

The objectives of this course are:

- To learn (or review) basic theoretical results about Frailty models.
- To understand how Frailty models can be applied to real data, and how to interpret them
- To fit Frailty models to some real datasets by using R and aML.

## Schedule

8	July	10.00-12.00	Introduction to Frailty Models
9	July	10.00-12.00	Inference: FIML, Penalised Likelihood, MCMC
9	July	14.30-17.00	Practical Session in Computer Lab
10	July	10.00-13.00	Multiprocess models
11	July	10.00-13.00	Inference, Identification and software
14	July	9.00-12.00	Practical Session in Computer Lab

## Recommended texts

- Wienke, A. (2010) *Frailty Models in Survival Analysis*, Chapman & Hall.
- Lillard L.A. & Panis C.W.A. (2003), *aML Multilevel Multiprocess Statistical Software, Version 2.0.*, EconWare, Los Angeles, California.