



Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

3 credits	15.0 h	Q2
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Teacher(s)	Legrand Catherine ;
Language :	English
Place of the course	Louvain-la-Neuve
Main themes	Classical survival analyses techniques assume that (1) the observations are independent, (2) if followed long-enough all observations will eventually experience the event of interest, and (3) only one event is of particular interest and no other event may prevent this event to occur. In this course, we will investigate other models which are applicable for correlated observations (frailty models), models which allow to consider the case when a proportion of the population will never experience the event of interest (cure models), and models to be applied in the case of competing risks (competing risks models) or of several events of interest (multi-state models)..
Aims	<p>1 The objectives of the course are to provide each year a comprehensive exposition of one or more specific topic(s) of special interest in the field of biostatistics.</p> <p>-----</p> <p><i>The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".</i></p>
Evaluation methods	<p>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</p> <p>Students are evaluated on an ongoing basis on the quality of their presentations, their answers to questions from other students but also on the basis of their participation during the presentations of other students.</p> <p>An open-book oral exam will be organized and will cover the entire course.</p>
Teaching methods	<p>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</p> <p>The course is structured around guided readings of articles, with question/answer sessions. Students will then be asked to present to the other students the subjects that have been assigned to, answer the questions of the other students and of the professor and also demonstrate active participation during the presentations of the other students.</p> <p>Depending on the evolution of the situation in the second quadrimstre, the course will be organized either face-to-face or remote.</p>
Content	After a brief summary of so-called "classical" survival analysis techniques, more advanced survival models will be studied, namely frailty models, cure models and competing risks models. Main estimation techniques (parametric and/or semi-parametric models) will be discussed, as well as their implementation in standard statistical software (when available). Cases of applications of these models will be studied and interpretation of these models will be discussed.
Inline resources	All necessary resources will be made available to students via Moodle.
Bibliography	Articles mis à disposition via moodle.
Faculty or entity in charge	LSBA

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Certificat d'université : Statistique et sciences des données (15/30 crédits)	STAT2FC	3		
Master [120] in Statistic: General	STAT2M	3		
Master [120] in Statistic: Biostatistics	BSTA2M	3		