

6 credits	20.0 h + 20.0 h	Q1
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Teacher(s)	Bugli Céline (compensates Govaerts Bernadette) ;Govaerts Bernadette ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	Main themes: Part (A): - Steps of a statistical data analysis with a statistical software - Classes of statistical software - Statistical graphics: main classes of graphics and efficient use - Basic statistical analysis with "point and click" statistical software. Part (B): - Random numbers generation, calculation of probabilities and quantiles for most common statistical distributions. - Algorithms to estimate linear and non linear models and associated numerical problems. - Maximum likelihood estimation. - Introduction to resampling methods - Programming in the S language under the S-Plus or R environment. - Programming in SAS (Use of SAS/BASE, SAS/STAT and SAS/Graph).
Aims	<p>At the end of this course, the students will have gain a critical view of the different classes of statistical software available on the market and basic culture on statistical algorithms and graphics. They will also be able to realise basic statistical analysis with different software (SAS, S-Plus, R, Excel, SPSS...) and write programs in the S and SAS programming languages. This course is organised in two parts: Part (A): basics of statistical computing and case studies. Part (B): statistical algorithms and SAS and R Software</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>
Content	Part (A): - Steps of a statistical data analysis with a statistical software - Classes of statistical software - Statistical graphics: main classes of graphics and efficient use - Basic statistical analysis with "point and click" statistical software. Part (B): - Random numbers generation, calculation of probabilities and quantiles for most common statistical distributions. - Algorithms to estimate linear and non linear models and associated numerical problems. - Maximum likelihood estimation. - Introduction to resampling methods - Programming in the S language under the S-Plus or R environment. - Programming in SAS (Use of SAS/BASE, SAS/STAT and SAS/Graph).
Faculty or entity in charge	LSBA

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Forests and Natural Areas Engineering	<a href="#">BIRF2M</a>	6		
Master [120] in Agricultural Bioengineering	<a href="#">BIRA2M</a>	6		
Master [120] in Biomedical Engineering	<a href="#">GBIO2M</a>	6		
Master [120] in Actuarial Science	<a href="#">ACTU2M</a>	6		
Master [120] in Statistics: General	<a href="#">STAT2M</a>	6		
Master [120] in Mathematical Engineering	<a href="#">MAP2M</a>	6		
Master [120] in Mathematics	<a href="#">MATH2M</a>	6		
Master [120] in Chemistry and Bioindustries	<a href="#">BIRC2M</a>	6		
Master [120] in Statistics: Biostatistics	<a href="#">BSTA2M</a>	6		
Master [120] in Environmental Bioengineering	<a href="#">BIRE2M</a>	6		
Master [120] in data Science: Statistic	<a href="#">DATS2M</a>	6		
Minor in Statistics and data sciences	<a href="#">LSTAT100I</a>	6		
Additional module in Statistics and data science	<a href="#">LSTAT100P</a>	6		