












4.0 credits

15.0 h + 5.0 h

2q

Teacher(s) :	Lambert Philippe ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	<ul style="list-style-type: none"> - The Bayesian model: basic principles. - The likelihood function and its a priori specification. - One-parameter models: choice of the a priori distribution, derivation of the a posteriori distribution, summarizing the a posteriori distribution. - Multi-parameter models: choice of the a priori distribution, derivation of the a posteriori distribution, nuisance parameters. Special cases: the multinomial and the multivariate Gaussian models. - Large sample inference and connections with asymptotic frequentist inference. - Bayesian computation.
Aims :	<p>By the end of the course, the student will be familiar with the principles and the basic techniques in Bayesian statistics. He or she will be able to use and to put forward the advantages and drawbacks of that paradigm in standard problems.</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 :	<ul style="list-style-type: none"> - The Bayesian model: basic principles. - The likelihood function and its a priori specification. - One-parameter models: choice of the a priori distribution, derivation of the a posteriori distribution, summarizing the a posteriori distribution. - Multi-parameter models: choice of the a priori distribution, derivation of the a posteriori distribution, nuisance parameters. Special cases: the multinomial and the multivariate Gaussian models. - Large sample inference and connections with asymptotic frequentist inference. - Bayesian computation.
Other infos :	<p>References :</p> <p>Ouvrages de référence</p> <p>Gelman, A., Carlin, J.B., Stern, H.S. and Rubin, D.B. (2003,2nd edition) Bayesian Data Analysis. Chapman and Hall.</p> <p>Spiegelhalter, D.J., Thomas, A. and Best, N.G. (1999) WinBUGS User Manual. MRC Biostatistics Unit.</p> <p>Bolstad, W.M.(2004) Introduction to Bayesian Statistics. Wiley.</p>
Faculty or entity in charge:	LSBA

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Minor in Statistics	LSTAT100I	4	-	
Master [120] in Biomedical Engineering	GBIO2M	4	-	
Master [120] in Economics: General	ECON2M	5	-	
Master [120] in Mathematical Engineering	MAP2M	4	-	
Master [120] in Biomedicine	SBIM2M	4	-	
Master [120] in Statistics: General	STAT2M	4	-	
Additional module in Mathematics	LMATH100P	4	-	
Master [120] in Statistics: Biostatistics	BSTA2M	4	-	
Master [120] in Mathematics	MATH2M	4	-	
Master [120] in Business Engineering	INGE2M	5	-	
Master [120] in Business Engineering	INGM2M	5	-	
	STAT2FC	4	-	