

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"> <li>- The Bayesian model: basic principles.</li> <li>- The likelihood function and its a priori specification.</li> <li>- One-parameter models: choice of the a priori distribution, derivation of the a posteriori distribution, summarizing the a posteriori distribution.</li> <li>- 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.</li> <li>- Large sample inference and connections with asymptotic frequentist inference.</li> <li>- Bayesian computation.</li> </ul>
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"> <li>- The Bayesian model: basic principles.</li> <li>- The likelihood function and its a priori specification.</li> <li>- One-parameter models: choice of the a priori distribution, derivation of the a posteriori distribution, summarizing the a posteriori distribution.</li> <li>- 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.</li> <li>- Large sample inference and connections with asymptotic frequentist inference.</li> <li>- Bayesian computation.</li> </ul>
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>

<p>Cycle and year of study :</p>	<ul style="list-style-type: none"> <li>&gt; <a href="#">Master [120] in Statistics: General</a></li> <li>&gt; <a href="#">Master [120] in Statistics: Biostatistics</a></li> <li>&gt; <a href="#">Master [120] in Business engineering</a></li> <li>&gt; <a href="#">Master [120] in Mathematics</a></li> <li>&gt; <a href="#">Bachelor in Information and Communication</a></li> <li>&gt; <a href="#">Bachelor in Philosophy</a></li> <li>&gt; <a href="#">Bachelor in Pharmacy</a></li> <li>&gt; <a href="#">Bachelor in Computer Science</a></li> <li>&gt; <a href="#">Bachelor in Economics and Management</a></li> <li>&gt; <a href="#">Bachelor in Motor skills : General</a></li> <li>&gt; <a href="#">Bachelor in Human and Social Sciences</a></li> <li>&gt; <a href="#">Bachelor in Sociology and Anthropology</a></li> <li>&gt; <a href="#">Bachelor in Political Sciences: General</a></li> <li>&gt; <a href="#">Bachelor in Mathematics</a></li> <li>&gt; <a href="#">Bachelor in Biomedicine</a></li> <li>&gt; <a href="#">Bachelor in Engineering</a></li> <li>&gt; <a href="#">Bachelor in religious studies</a></li> <li>&gt; <a href="#">Certificat universitaire en statistique</a></li> <li>&gt; <a href="#">Master [120] in Biomedicine</a></li> <li>&gt; <a href="#">Master [120] in Mathematical Engineering</a></li> <li>&gt; <a href="#">Master [120] in Economics: General</a></li> </ul>
<p>Faculty or entity in charge:</p>	<p>LSBA</p>