




3 crédits	15.0 h	Q2
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Enseignants	Lorant Vincent ;Speybroeck Niko coordinateur ;
Langue d'enseignement	Anglais
Lieu du cours	Bruxelles Woluwe
Préalables	A course on linear and logistic regression models is a need to follow this course. R (free downloadable software) will be used in some of the analyses and it is an advantage to master the basics of this software. WFSP 2100 WFSP 2104 FSP2105 ANGLAIS <i>Le(s) prérequis de cette Unité d'enseignement (UE) sont précisés à la fin de cette fiche, en regard des programmes/formations qui proposent cette UE.</i>
Acquis d'apprentissage	Learning outcomes will vary, depending on the focus which will be adapted according to current important public health problems asking advanced methods, and according to the expertise and research projects of the lecturer (Vincent Lorant & Niko Speybroeck). Learning outcomes may include:  1. Understanding and using main concepts in social epidemiology and network analysis in a public health context 2. Understanding and being able to conduct the analysis of health inequalities or social network analysis studies 3. Understanding burden of disease calculations and their use 4. Understanding the analysis of complexities in public health through simulation models and classification and regression trees  ----- <i>La contribution de cette UE au développement et à la maîtrise des compétences et acquis du (des) programme(s) est accessible à la fin de cette fiche, dans la partie « Programmes/formations proposant cette unité d'enseignement (UE) ».</i>
Modes d'évaluation des acquis des étudiants	Paper presentation and essay. Language : English
Méthodes d'enseignement	<u>Language:</u> English Cette activité d'enseignement est donnée une année sur deux par le Pr V. Lorant et une année sur deux par le Pr N. Speybroeck
Contenu	The content will include parts of the following: <u>Social epidemiology</u> 1. Social network data 2. Graphs and matrices 3. Centrality, power and social capital 4. Exploring networks 5. Statistical analysis of network data <u>The analysis of health inequalities</u> 1. Measures of health inequalities 2. Decomposing health inequalities 3. The difference between an analysis of health inequalities and an analysis of average health levels <u>Analysis of complexities in public health</u> 1. Classification and Regression Trees 2. Simulation Models 3. Mathematical Models 4. Agent-Based Models <u>Analysis of burden of disease</u> 1. The Global burden of disease context 2. Computing the burden of disease 3. Trends analysis of burden of disease
Ressources en ligne	Moodle

<p>Bibliographie</p>	<p><u>Social epidemiology:</u> 1-4</p> <ol style="list-style-type: none"> <li>1. Dimaggio P, Garip F. Network effects and social inequality. Annual review of sociology. 2012;38:93-118.</li> <li>2. Oakes JM, Kaufman JS. Methods in social epidemiology. Vol 1st ed. San Francisco, CA: Jossey-Bass; 2006.</li> <li>3. Provan KG, Veazie MA, Staten LK, Teufel-Shone NI. The use of network analysis to strengthen community partnerships. Public Administration Review. 2005;65(5):603-612.</li> <li>4. Valente TW. Social networks and health models, methods, and applications. Oxford: Oxford University Press; 2010.</li> </ol> <p><u>The analysis of health inequalities</u></p> <ol style="list-style-type: none"> <li>1. Konings P., Harper S., Lynch J., Hosseinpoor A.R., Berkvens D., Lorant V., Geckova A., Speybroeck N. (2010). Analysis of socioeconomic health inequalities using the Concentration Index. International Journal of Public Health, 55, 71-74. [Editor's Choice].</li> <li>2. Speybroeck N., Harper S., De Savigny D., Victora C. (2012). Inequalities of health indicators for policy makers: six hints. International Journal of Public Health, 57, 855-858.</li> <li>3. Speybroeck N., Konings P., Lynch J., Harper S., Berkvens D., Lorant V., Geckova A. Hosseinpoor A.R. (2010). Decomposing socioeconomic health inequalities. International Journal of Public Health, 55, 347-351.</li> <li>4. Van Malderen C., Van Oyen H., Speybroeck N. (2013). Contributing determinants of overall and wealth-related inequality in under-5 mortality in 13 African countries. Journal of Epidemiology &amp; Community Health, 67, 667-676.</li> </ol> <p><u>Analysis of complexities in public health</u></p> <ol style="list-style-type: none"> <li>1. Kanobana K., Devleeschauwer B., Polman K., Speybroeck N. (2013). An agent-based model of exposure to human toxocarasis: a multi-country validation. Parasitology, 140, 986-998.</li> <li>2. Speybroeck N. (2012). Classification and regression trees. International Journal of Public Health, 57, 243-246.</li> <li>3. Speybroeck N., Van Malderen C., Harper S., Müller B., Devleeschauwer B. (2013). Simulation Models for Socioeconomic Inequalities in Health: A Systematic Review. International Journal of Environmental Research and Public Health, 10, 5750-5780</li> </ol> <p><u>The analysis of disease burden</u></p> <ol style="list-style-type: none"> <li>1. Devleeschauwer B., Havelaar A., Maertens de Noordhout C., Haagsma J., Praet N., Dorny P., Duchateau L., Torgerson P., Van Oyen H., Speybroeck N. (2014). Calculating Disability-Adjusted Life Years to quantify burden of disease. International Journal of Public Health, 59, 565-569.</li> <li>2. Devleeschauwer B., Havelaar A., Maertens de Noordhout C., Haagsma J., Praet N., Dorny P., Duchateau L., Torgerson P., Van Oyen H., Speybroeck N. (2014). DALY calculation in practice: a stepwise approach. International Journal of Public Health, 59, 571-574.</li> <li>3. Devleeschauwer B., Maertens de Noordhout C., Smit GS, Duchateau L, Dorny P, Stein C, Van Oyen H., Speybroeck N. (2014). Quantifying burden of disease to support public health policy in Belgium: opportunities and constraints. BMC Public Health, 14: 1196.</li> <li>4. Maertens de Noordhout C., Devleeschauwer B., Angulo F., Verbeke G., Kirk M., Havelaar A., Haagsma J., Speybroeck N. (2014). The global burden of Listeriosis: a systematic review and meta-analysis. The Lancet Infectious Diseases, 14, 1073 ' 1082.</li> </ol>
<p>Autres infos</p>	<p><u>Language:</u> English</p> <p>Goal : The course aims to teach the student on understanding and using advanced methods to analyze public health problems. The course is addressing topics such as social epidemiology, the analysis of health inequalities and the burden of disease.</p>
<p>Faculté ou entité en charge:</p>	<p>FSP</p>

<b>Programmes / formations proposant cette unité d'enseignement (UE)</b>				
Intitulé du programme	Sigle	Crédits	Prérequis	Acquis d'apprentissage
Master [120] en sciences de la santé publique	ESP2M	3	WFSP2100 ET WFSP2104 ET WFSP2105	
Master [120] en statistique, orientation biostatistiques	BSTA2M	3		
Master [60] en sciences biomédicales	SBIM2M1	3		
Master [120] en sciences biomédicales	SBIM2M	3		