UCLouvain

wfsp2201

2025

Advanced methods in public health : seminar

The version you're consulting is not final. This course description may change. The final version will be published on 1st June.

3.00 credits	15.0 h	Q2

Language :	English
Place of the course	Bruxelles Woluwe
Prerequisites	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. *The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Main themes	social epidemiology; network analysis; inequalities of health; burden of disease; the analysis of complexity.
Learning outcomes	**At the end of this learning unit, the student is able to :** 1 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
Evaluation methods	Paper presentation and essay (sometimes a short test) **Language** : **English**
Teaching methods	Language: English The course will be given in an interactive manner, with the aim to learn techniques that can be useful when working with epidemiological data.
Content	The content can include for example parts of the following: The analysis of health inequalities 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 Analysis of complexities in public health 1. Classification and Regression Trees 2. Simulation Models 3. Mathematical Models 4. Agent-Based Models Analysis of burden of disease 1. The Global burden of disease context 2. Computing the burden of disease 3. Trends analysis of burden of disease Surveillance systems
Inline resources	Moodle

Bibliography	*The analysis of health inequalities* 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]. 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. 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. 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 & Community Health, 67, 667-676. *Analysis of complexities in public health* 1. Kanobana K., Devleesschauwer B., Polman K., Speybroeck N. (2013). An agent-based model of exposure to human toxocariasis: a multi-country validation. Parasitology, 140, 986-998. 2. Speybroeck N. (2012). Classification and regression trees. International Journal of Public Health, 57, 243-246. 3. Speybroeck N., Van Malderen C., Harper S., Müller B., Devleesschauwer B. (2013). Simulation Models for Socioeconomic Inequalities in Health: A Systematic Review. International Journal of Environmental Research and Public Health, 10, 5750-5780 *The analysis of disease burden* 1. Devleesschauwer 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. 2. Devleesschauwer 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. 3. Devleesschauwer 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. 4. Maertens de Noordhout C., Devleesschauwer 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.
Other infos	Language: English 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.
Faculty or entity in charge	FSP

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Statistics: Biostatistics	BSTA2M	3		🔍
Master [120] in Sociology	SOC2M	5		🔍
Master [120] in Public Health	ESP2M	3	WFSP2100 AND WFSP2104 AND WFSP2105	🔍