Master of Public Health
Module 229 ISB: "Modelling of infectious diseases"
Coordinator: P. Crépey (EHESP)

Dates : week 3, from January 22nd to 26th 2024

EHESP, 20 Avenue George Sand, La Plaine St Denis Room – room 408

Monday January 22nd	**Tuesday January 23rd**	**Wednesday January 24th**	**Thursday January 25th**	**Friday January 26th**
9:00 am General introduction to mathematical modelling: concepts, objectives and main classes of epidemic models (population vs individual based, deterministic vs stochastic, spatial models). Instructor: P. Crépey (EHESP)	**9:00 am** The basic reproduction number (R0): defining the concepts and expression derivation. Exercises. Instructor: P. Crépey (EHESP)	**9:00 am** Network and metapopulation models. Why networks are interesting tools in epidemiological contexts? Lab: Network visualization with R and shiny. Instructor: P. Crépey (EHESP)	**9:00 am** Introduction to the methods and issues surrounding parameter estimation in epidemic models (1): general concepts and main objectives. Instructor: N. Hozé (Institut Pasteur)	**9:00 am** What can we learn from mathematical models? Unnaturally-born outbreaks as an example (1): general concepts and main objectives. Instructor: N. Hozé (Institut Pasteur)
12:00 pm Lunch	**12:00 pm Lunch**	**12:00 pm Lunch**	**12:00 pm Lunch**	**12:00 pm Lunch**
1:00 pm - 4:00 pm Building SIR-like epidemic models: various structures for various situations. Instructor: P. Crépey (EHESP)	**1:00 pm - 4:00 pm** Predicting the effect of interventions with the reproduction number. Instructor: P. Crépey (EHESP)	**1:00 pm - 4:00 pm** Lab : Using GleamViz, an epidemic simulator able to capture the worldwide spreading of diseases, to answer public health questions. Instructor: P. Crépey (EHESP)	**1:00 pm - 4:00 pm** Introduction to the methods and issues surrounding parameter estimation in epidemic models (2): practical aspects. Instructor: N. Hozé (Institut Pasteur)	**1:00 pm - 4:00 pm** What can we learn from mathematical models? Unnaturally-born outbreaks as an example (2): articles reading and practical aspects. Instructor: N. Hozé (Institut Pasteur)

Please note that some minor changes could occur