

Syllabus Major Spatial Analysis

N°231	Spatial Analysis
Coordinator	Cindy PADILLA Department MeTis EHESP
Dates	22 to 26 january 2018
Credits/ECTS	3 ECTS
Duration	30 hours
Location	Room : Sequoia 1 , EHESP Avenue Prof Leon Bernard RENNES
Description	Mapping is a useful and powerful tool to represent information which varies on a territory. It is particularly true in public health issues where health determinants are multiples and may be related to individual behavior and also to neighborhood factors which are not equally distributed in the space. Detecting clusters grouping small areas at greater health risk tends to be a appropriate method to orientate public health action. An explanatory spatial analysis can then be applied assessing the relationship between the cluster and the neighborhood characteristics in order to reveal risk factors of the health event.
Prerequisites	
Course learning objectives	Students who successfully complete this course will be able to: 1- Identify 2- Describe the methods 3- Apply the principles 4- Analyse critically the findings of public health papers
Structure (details of sessions title/speaker/date /duration)	Details of the 3 sessions (some can be grouped when common topics) 1. GIS tools in spatial analysis - Cindy PADILLA (Ehesp) 2. Spatial statistics and detection of clusters - (Irvine School, Californie) 3. Critical lecture - Cindy PADILLA (Ehesp)
Resources	Books All readings and materials will be posted on REAL. Readings are available below for each session. Website, online libray
Course requirement	Students will be encouraged to prepare lab sessions, and self-practice on the software.. Students are expected to read and analyse selected papers for the group work before the courses.
Grading and assessment	The final grade results from one group work and from a final sitting exam Very detailed presentation of breakdown of grades (a table can be included) The sitting exam will be scheduled on 26/01/18 (date will be confirmed in due time) Note also that students will complete a questionnaire that assesses their own and their teammates' contributions to group work. All team members will receive the same grade except if it is clear that a student has not participated effectively (attended and contributed to meetings; made timely, helpful contributions; been constructive, etc.). In that case, the student's grade will be lowered accordingly.
Course policy	Attendance & punctuality Regular and punctual class attendance is a prerequisite for receiving credit in a course. Students are expected to attend each class. Attendance will be taken at each class. The obligations of attendance and punctuality cover every aspect of the course: - lectures, conferences, group projects, assessments, examinations, as described in EHESP Academic Regulations http://mph.ehesp.fr EHESP Academic Regulation Article. 3). If students are not able to make it to class, they are required to send an email to the instructor and to the MPH program coordinating team explaining their absence prior to the scheduled class date. All supporting documents are provided to the end-of-year panel. Students who miss class are responsible for content. Any student who misses a class has the responsibility for obtaining copies of notes, handouts and assignments. If additional assistance is still necessary, an appointment should be scheduled with the instructor. Class time is not to be used to go over material with students who have missed class. Lateness: Students who are more than 10 minutes late may be denied access to a class. Repeated late arrivals may be

	<p>counted as absences (See http://mph.ehesp.fr EHESP Academic Regulation Article. 3 Attendance & Punctuality)</p> <p>Maximum absences authorized & penalty otherwise Above 20% of absences will be designated a fail for a given class. The students will be entitled to be reassessed in any failed component(s). If they undertake a reassessment or they retake a module this means that they cannot normally obtain more than the minimum pass mark (i.e. 10 out of 20)</p> <p>Exceptional circumstances Absence from any examination or test, or late submission of assignments due to illness, psychological problems, or exceptional personal reasons must be justified; otherwise, students will be penalized, as above mentioned. Students must directly notify their professor or the MPH academic secretariat before the exam or before the assignment deadline. Before accepting the student's justification, the professor or the MPH academic secretariat has the right to request either a certificate from the attending physician or from a psychologist, or from any other relevant person (See http://mph.ehesp.fr EHESP Academic Regulation Article 4 Examinations).</p> <p>Courtesy: All cell phones/pages MUST be turned off during class time. Students are required to conduct themselves according to professional standards, eating during class time is not permitted during class time, such as course or group work.</p>
Valuing diversity	Diversity enriches learning. It requires an atmosphere of inclusion and tolerance, which oftentimes challenges our own closely-held ideas, as well as our personal comfort zones. The results, however, create a sense of community and promote excellence in the learning environment. This class will follow principles of inclusion, respect, tolerance, and acceptance that support the values of diversity. Diversity includes consideration of: (1) life experiences, including type, variety, uniqueness, duration, personal values, political viewpoints, and intensity; and (2) factors related to "diversity of presence," including, among others, age, economic circumstances, ethnic identification, family educational attainment, disability, gender, geographic origin, maturity, race, religion, sexual orientation and social position.
Course evaluation	EHESP requests that you complete a course evaluation at the end of the school year. Your responses will be anonymous, with feedback provided in the aggregate. Open-ended comments will be shared with instructors, but not identified with individual students. Your participation in course evaluation is an expectation, since providing constructive feedback is a professional obligation. Feedback is critical, moreover, to improving the quality of our courses, as well as for instructor assessment.

Session 1	GIS tools in spatial analysis
Speakers	Cindy PADILLA
Session Outline	
Learning Objectives	<p>Understand what GIS mean and objectives of spatial analysis The objectives are</p> <ul style="list-style-type: none"> - data management and analyze demographic data using ArcGIS - creating maps and - using major GIS tools.
Duration	12 hours
Training methods	Lecture and ArcGis practice
Readings	<p><u>Required Reading</u> Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks in 188 countries, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013</p> <p><u>Supplemental Reading</u> Preventing disease through healthy environments. WHO 2016 (http://www.who.int/quantifying_ehimpacts/publications/preventing-disease/en/)</p>

Session 2	Spatial statistics and detection of clusters
Speakers	- Veronica.M Vieira, professor in Irvine University

Session Outline	
Learning Objectives	<p><i>At the end of the session, the students should be able to:</i></p> <ul style="list-style-type: none"> - analyze geographic patterns - discuss spatial autocorrelation - apply spatial statistics tools - provide students with hands-on experience combining cluster statistics with GIS.
Duration	12 Hours
Training methods	Lecture practice on ArcGIS and R software Conferences dealing with research projects.
Reading	

Session 3	Critical lecture related to spatial articles
Speakers	Cindy Padilla
Session Outline	
Learning Objectives	<p><i>At the end of the session, the students should be able to:</i></p> <ul style="list-style-type: none"> - Present during 15 minutes by groups an article related on spatial statistics and respond to questions. - Listen the presentation of the others students <p>Individual QCM Exam</p>
Duration	6 hours
Training methods	Lecture and Conference from students
Assignments	Group work : paper will be read Presentation made by groups on 26 January 2018 Work will be include in the final grade