2SC5490 – Design project for an eco-neighborhood

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Department: DOMINANTE - GRANDS SYSTÈMES EN INTERACTION, DOMINANTE - CONSTRUCTION VILLE TRANSPORTS
Language of instruction: FRANCAIS
Campus: CAMPUS DE PARIS - SACLAY
Workload (HEE): 40
On-site hours (HPE): 27,00

Description
The purpose of the integration project is to make the preliminary design of an eco-district.
Projects are carried out in groups of about twenty students. However, they are also broken down into smaller elements, called district modules (residential buildings, public equipment, roads, and networks).
Each team should find solutions to satisfy several objectives (the eco-district referential). Some of these objectives are at the district level (urban shape, economic balance, ...).
Several deliverables are expected at all scales: individual level, team (sub-group), and group.

Quarter number
ST5

Prerequisites (in terms of CS courses)
Specific module : sustainable urban planning

Syllabus
(if the case is confirmed)

The Corbeville ZAC: what future in the short, medium, and long term for this space near the interchange of the N118? A project was submitted by the EPAPS to a public inquiry in the spring of 2019. One or more significant parameters of the existing studies are modified (political orientation, mobility solutions, the ambition of density, ...). We propose to analyze the consequences of these changes on the urban project.

Input data :
- Historical aerial photo

- Maps available on geoportal (in particular IGN with topography, watercourse, and existing building)
- Insee data available online
- Program and guide EPAPS of the district of Moulon

Class components (lecture, labs, etc.)
Sprint-based project (3 sprints of 1,5 days each).
Self-organized and connected teams within the group, sprint reviews with each group supervisor.
Opportunity to get specific expertise during some sessions.
Deliverables must be done throughout the week (detailed schedule presented the first day).

Grading
Continuous assessment, based on group deliverables. An individual deliverable is also assessed.

Resources
Supervisors and experts are professors, architects, urbanists, engineers, researchers, ...
Franck Marle, Frédérique Delmas, Ulisse Vizzardi, Romain Iliou, Loup Calosci, François Cointe, François Cluzel, Arnaud Lafont,

Learning outcomes covered on the course
Upon completion of this module, students will progress in:
- using a transdisciplinary approach to complex eco-districts design
- using scientific, technological, social, and economic knowledge to design and validate such a complex system
- applying a collaborative project management approach to attain desired results

Description of the skills acquired at the end of the course
C1.4 Design, detail and corroborate a whole or part of a complex system.
C1.5 Bring together broad scientific and technical concepts in a core structure that is nestled in an interdisciplinary approach.
C3.6 Evaluate the efficiency, feasibility and strength of the solutions offered.
C7.1 Persuade at the level of core values; to be clear about objectives and expected results. To apply rigour when it comes to assumptions and structured undertakings, and in doing so structure and problematise the ideas themselves. To make the added value known.
C8.4 Work using project management techniques appropriately tailored to the situation
C9.4 Demonstrate rigour and critical thinking in approaching problems from all angles, be they scientific, social or economic.