


 Faculty of Sciences

BIOL2191 Individuals and populations ecology

[45h] 3.5 credits

This course is taught in the 1st and 2nd semester

Teacher(s): Michel Baguette, Thierry Hance, Anne-Laure Jacquemart (coord.), Eric Le Boulengé, Olivier Raspé (supplée Anne-Laure Jacquemart), Hans Van Dyck, Renate Wesselingh

Language: French

Level: Second cycle

Aims

To give a spatio-temporal outline of adaptative mechanisms of living beings, of the functioning and of the systems of regulation of their populations.

In particular we need to analyze all the components of the "population-environment" system and to highlight the correlations between the natural history of the individuals and the strategies of the populations with the different changes in their living conditions.

Main themes

First part: Demecology and dynamics of populations (30h): Data taken from the observation and experimentation of the living world.

a) The notion of population. b) the intraspecific relations: group effect, competition and mass effect; intraspecific competition and ecological value. c) population density: nomenclatureXX, principes and methods of estimation. d) Spatial structure of populations: density-spatial structure relations. e) Isolation and territoriality f) Nataly and mortality: data tables. g) Growth of populations h) Theories on the variations of density and numerical regulation of populations i) Conclusions: the demographical and adaptative strategies.

Second part: The adaptative strategies of plant populations (15h):

a) the primary strategies: ressource allocation. The C-S-R model : competitive, stress-tolerant and ruderal species. Particular case of the invasive plants. b) The strategies linked to reproduction: vegetative multiplication and reproduction, pollinisation syndroms, evolution of mating systems. c) Propagule ecology: dispersal, dormancy, germination, seed bank. d) Edaphology notions, factors and elements of edaphic atmosphere, soil properties, classification.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites: Ecology elements (BIOL1210).

Evaluation: oral examination with written preparation.

Support: syllabus, articles and reference books (Grime et al., 1998; Silvertown & Lovett-Doust, 1993; Barbour et al., 1998; Ricklefs & Miller, 2000).

Assisted work: cfr. integrated practical works BIOL2193

Programmes in which this activity is taught

ESP3DS/R Diplôme d'études spécialisées en santé publique (radioprotection, experts pour établissements de classe 1)

Other credits in programs

BIOL21/B Première licence en sciences biologiques (Biologie des organismes et des populations) Mandatory

ESP32DS/RE Deuxième année du diplôme d'études spécialisées en santé publique (Radioprotection de l'environnement) Mandatory