

[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, Hans Van Dyck, Renate Wesseligh

Language: french

Level: 2nd cycle course

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) Natality 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 credits in programs

BIOL21/B	Première licence en sciences biologiques (Biologie des organismes et des populations)	(3.5 credits)	Mandatory
ESP32DS/RE	Deuxième année du diplôme d'études spécialisées en santé publique (Radioprotection de l'environnement)		Mandatory