Modélisation des écosystèmes aquatiques

Lecturer
Nathalie GYPENS (Coordinator)

Course mnemonic
BING-F525

ECTS credits
5 credits

Language(s) of instruction
French

Course period
First term

Course content

Revision of mechanisms behind the functioning of aquatic ecosystems. Conceptualization and mathematical formulation of autotrophic and heterotrophic processes, module implementation and sensitivity testing. Identification of databases needed for the formulation of environmental constrains and the calibration and validation of models.

Objectives (and/or specific learning outcomes)

Learning of concepts and steps needed for the construction of deterministic models and their use for understanding and predicting the response of aquatic ecosystems to natural and anthropogenic perturbations.

Pre-requisits and co-requisits

Pre-requisites courses

BING-F410 | Ecosystèmes aquatiques: fonctionnement et paramètres de qualité de l'eau | 5 crédits

Teaching method and learning activities

Theory supported by modeling exercises (module implementation and sensitivity testing) on computer. Three modules are analysed and are related to the dynamics of phytoplankton, zooplankton and bacterioplankton. A report is requested after each module.

References, bibliography and recommended reading

Soetaert K, Herman P. 2008. A practical guide to ecological modelling. Springer

Other information

Contact(s)

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Evaluation method(s)

Other

Evaluation method(s) (additional information)

The assessment is based on progress made along model exercices, written reports and oral examination. The latter is based on known model simulations discussed in relation with theory

Determination of the mark (including the weighting of partial marks)

Average of 2 notes: practice (modeling exercices + reports) and oral examination.

Main language(s) of evaluation

French

Programmes

Programmes proposing this course at the faculty of Sciences

MA-BINF | Master in Bio-informatics and Modelling | finalité Research/unit 2, MA-ENVI | Master in Environmental Science and Management | finalité Environmental Science/unit 2 and MA-IRBE | Master in Environmental Bioengineering | finalité Professional/unit 2

Programmes proposing this course at the Brussels School of Engineering

MA-IRBE | Master in Environmental Bioengineering | finalité Professional/unit 2