ENV-366

Quantitative methods II

Fang Jiannong

Cursus	Sem.	Type
Environmental Sciences and Engineering	BA6	Obl.
HES - SIE	E	Obl.

Language of teaching	English
Credits	4
Session	Summer
Semester	Spring
Exam	Written
Workload	120h
Weeks	14
Hours	**4 weekly**
Courses	2 weekly
Exercises	2 weekly
Number of positions	

Summary

Formulation, solution, and analysis of mathematical models for environmental science and engineering.

Content

- Algebraic and numerical computation using software tools
- Formulation of process-based environmental engineering models
- Solution and analysis of environmental engineering models
- Numerical methods used in solution of environmental engineering models

Learning Prerequisites

Recommended courses

Analyse IV
Numerical Analysis

Important concepts to start the course

An interest in applying quantitative methods to environmental problems!

Learning Outcomes

By the end of the course, the student must be able to:

- Develop mathematical models which describe environmental processes.
- Analyze the models for their stability and basic behavior.
- Apply the models and numerical simulation techniques to solve practical problems.

Transversal skills

- Demonstrate the capacity for critical thinking
- Continue to work through difficulties or initial failure to find optimal solutions.

Teaching methods

Ex cathedra teaching, exercises using the Matlab software packages

Assessment methods

30 % mid-term exam during the semester
10 % continuous control (exercises) during the semester
60 % final written exam during exam session

Supervision

Office hours	Yes
Assistants	Yes
Forum	No