

ENV-366

**Quantitative methods II**

Fang Jiannong

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

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

**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

- 40 % mid-term exam during the semester
- 10 % continuous control (exercises) during the semester
- 50 % final written exam during exam session

### Supervision

Office hours	Yes
Assistants	Yes
Forum	No