INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

DPT BIOSCIENCES
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Mathematics and Modeling

Biomathematics 4: Differences Equations and Partial Differential Equations

IDENTIFICATION

CODE :	BS-4-S1-EC-BMMATH4
ECTS :	4.0

HOURS

Lectures :	18.0 h
Seminars :	32.0 h
Laboratory :	0.0 h
Project :	0.0 h
Teacher-student contact :	50.0 h
Personal work :	50.0 h
Total :	100.0 h

ASSESSMENT METHOD

2 x 1h practical reports

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

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AIMS

At the conclusion of this module the student will have to be capable of fitting into a team of mathematical modelling using dynamical systems in biology.
The educational objectives of this module are to learn the qualitative study of dynamical systems and of the applications in population dynamics, neurosciences and in the field of human health.

CONTENT

- The same applies to the Equations to Differences section.
- TP under R.
- EDP: current 3A and 4A concatenation with end content reduction.
- TP under Matlab.

BIBLIOGRAPHY

- Mathemical Models in Biology - Edelstein-Keshet, L - McGrawHill - 1988
- Mathematical Biology - Murray, JD - Springer Verlag - 1993
- Modélisation en Biologie et Ecologie - Pavé, A. - Aléas - 1994

PRE-REQUISITE

Solving simple ordinary differential equations.