

Mathematics

Maths S4 SHN1

IDENTIFICATION

CODE : PC-S4-MA-H1
ECTS : 3.0

HOURS

Lectures : 6.0 h
Seminars : 13.0 h
Laboratory : 0.0 h
Project : 0.0 h
Teacher-student
contact : 19.0 h
Personal work : 40.0 h
Total : 59.0 h

ASSESSMENT METHOD

The evaluation consists 2 written
tests 1:30 coefficient 1/2

TEACHING AIDS

TEACHING LANGUAGE

French

CONTACT

M. ATHANAZE Guy
guy.athanaze@insa-lyon.fr
M. PECATTE Timothee
timothee.pecatte@insa-lyon.fr

AIMS

The course offered during the semester extends concepts covered in the first year [convergence, limits, continuity, differentiability] to new classes of mathematical objects [numerical series, sequences of functions].

The study of improper integrals will prepare the student for the later study of Fourier and Laplace transforms and of probability theory.

This course is part of the "Pure Science" Unit.

It contributes to developing the following skills :

C1 : To analyse a (real or virtual) system or problem

C2 : To exploit a model for a real or virtual model

C5 : To process data

C6 : To communicate an analysis and a scientific approach in an argued and logical way

In this framework, the student will work and be assessed on the following points:

C11 - To split up a problem or a system into its component parts in interaction

C15 - To identify problematics or objectives

C16 - To build a proof

C25 - To use techniques of algebraic and numeric computation

C54 - To interpret data in the context of a model

C55 - To summarise and link together several intermediate results in order to answer a general question

C62 - To be able to speak with a satisfying level of language aiming at a good balance between a usual and symbolic language

CONTENT

Improper integrals

Numerical Series

Sequences of functions

BIBLIOGRAPHY

S. Balac et L. Chupin, Analyse et algèbre : cours de mathématiques de deuxième année avec exercices corrigés et illustrations avec Maple, Presses polytechniques et universitaires romandes.

F. Butin, M. Picq, J. Pousin, Mathématiques - Cours, exercices corrigés - 2e année de classes préparatoires intégrées, Collection "Références sciences", Ellipses