

Mathematics

Engineering Mathematics 2

IDENTIFICATION

CODE : GMCIP-3-S2-EC-MATHS
ECTS : 2.0

HOURS

Lectures : 12.0 h
Seminars : 14.0 h
Laboratory : 0.0 h
Project : 0.0 h
Teacher-student contact : 26.0 h
Personal work : 30.0 h
Total : 56.0 h

ASSESSMENT METHOD

Three 2-hours exams

TEACHING AIDS

Course handout

TEACHING LANGUAGE

French

CONTACT

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AIMS

Having a good knowledge of the mathematical concepts and tools which are necessary to formulate and solve mechanical problems.

CONTENT

1. Hilbert spaces, Hilbert basis, approximation, projection, Fourier series
2. Differential operators, eigenvalues, separation of variables
3. introduction to finite elements methods

BIBLIOGRAPHY

- C. Gasquet, P. Witomski, Fourier analysis and applications, Springer 1998
- J.-M. Gillsinger, M. Jaï, Éléments d'analyse fonctionnelle, fondements et applications aux sciences de l'ingénieur. PPUR 2010.

PRE-REQUISITE

Undergraduate Mathematics: linear algebra (rank, eigenvalues, diagonalization)