

UE Optimization Methods for Components and Systems

 ECTS
3 credits

 Component
UFR PhITEM
(physique,
ingénierie, terre,
environnement,
mécanique)

 Semester
Automne

- > **Teaching language(s):** English
- > **Open to exchange students:** Yes

Presentation

Description

Optimal design aims at finding solution of complex design problems using optimization algorithms. The objectives of this course is to presents the fundamentals of an engineering design study, problem specification, modelling for design, optimization algorithms.

Assessment: The grading policy comprises homework and lab assessments plus a final examination. The grade of the module is the weighted average of the marks of each assessment.

Course parts

UE Optimization Methods for Components and Systems - CM/TD	Lectures (CM) & Teaching Unit (UE)	25h
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Recommended prerequisites

numerical analysis, physical modelling

Bibliography

- Global optimization in engineering design, Ignacio E. Grossmann, Kluwer Academic Publishers, Dordrecht, 1996.
- Optimization methods for engineering design, Richard L. Fox, Addison-Wesley, Reading, Massachusetts, 1971.
- Practical optimization, Philip E. Gill, Walter Murray, Margaret H. Wright, Academic Press, 1981.
- Handbook of global optimization, Reiner Horst, Panos M. Pardalos, Kluwers Academic Publishers, Dordrecht Boston London, 1995.
- Multi-objective optimization using evolutionary algorithms, Kalyanmoy Deb, John Wiley & Sons, New-York, 2004.
- Combinatorial optimization: Theory and algorithms, Bernhard Korte, Jens Vygen, Springer Berlin, Heidelberg, 2018.

Useful info

Campus

- › Grenoble - Scientific Polygon