UE Optimization Methods for Components and Systems

ECTS
3 crédits

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

Période de l'année
Automne (sept. à dec./janv.)

> **Langue(s) d'enseignement:** Anglais

> **Ouvert aux étudiants en échange:** Oui

> **Code d'export Apogée:** PAX9COAD

Présentation

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.

Heures d'enseignement

CMTD	Cours magistral - Travaux dirigés	13h
TP	TP	12h

Pré-requis recommandés

numerical analysis, physical modelling

Bibliographie

- Global optimization in engineering design, Ignacio E. Grossmann, Kluwer Academic Publishers, Dordecht, 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.

Infos pratiques

Campus

> Grenoble - Domaine universitaire