

Introduction to non linear elliptic PDEs

ECTS : 6

Volume horaire : 37.5

Description du contenu de l'enseignement :

- Existence of weak solutions of linear and nonlinear elliptic PDEs by variational methods
- Regularity of weak solutions to linear and nonlinear elliptic PDEs
- Maximum principles and applications
- Brouwer degree, Leray-Schauder degree, fixed-point theorems
- Local and global bifurcation theory applied to nonlinear elliptic PDEs

Bibliographie, lectures recommandées :

- L.C. Evans, *Partial Differential equations* (Graduate Studies in Mathematics 19, AMS).
- L. Nirenberg, *Topics in Nonlinear Functional Analysis* (Courant Lecture Notes Series 6, AMS).