

# مباحثی در آنالیز (موضوع درس: همگن سازی)

شماره درس ۲۲۴۸۷

زمان کلاس: یکشنبه سه‌شنبه: ۱۳ - ۱۵  
مدرسین: مرتضی فتوحی، محسن یوسف‌نژاد

## سرفصل

- 1- Weak and weak\* convergence, Sobolev spaces, Oscillating periodic functions.
- 2- Elliptic problems, Periodic composite materials, Perforated domain (Porous media).
- 3- Homogenization of elliptic equations, Multiple-scale method, Tartar's method, Two-scale convergence, Unfolding method.
- 4- General approach to the non-periodic case, G-convergence, H-convergence, Gamma-convergence.
- 5- Homogenization of the heat equation, Homogenization of the wave equation.

## مراجع:

- 1- L. Tartar, *The General Theory of Homogenization*, Springer, (2009).
- 2- D. Cioranescu, P. Donato, *An Introduction to Homogenization*, Oxford University Press, (1999).