This course will provide an introduction into turbulent flows and exam thermal energy transfer by due to turbulent processes. The course looks at the turbulent fluid dynamics and convective heat transfer and exams both internal pipe flow and external boundary layer flows.

Major topics to include an introduction to turbulence, laminar-turbulent transition, universal law-of-the wall for both smooth and rough surfaces, eddy diffusivity in heat transfer, the turbulent Prandtl number, unheated starting length, hydrodynamic and thermal entrance effects and more.

Curious, email DrD at Peter.Disimile@uc.edu