Q: In *Density Functional Theory* the electronic density plays a fundamental role, allowing to formulate the electronic Quantum Many Body problem in terms of a variational principle with respect to the electronic ground state density and to define simple approximations for the exchange and correlation energy functional. Explain why the similarly simple Thomas-Fermi approximation provides instead only a rough qualitative approximation to the kinetic energy of the system.

A:

Indicate here a possible topic you would like to be covered during this course or a subject that you would like to be clarified further (we'll see what can be done, but no commitment):