A nice definition:

-    R. L. Axtell and J. M. Epstein. Coordination in transient social networks: an agent-based computational model of the timing of retirement. In J. M. Epstein, editor, Generative social science: Studies in agent- based computational modeling, page 146. Princeton University Press, 2006.

On line
http://www.econ.tuwien.ac.at/lva/compeco.se/artikel/epstein_coordination_in_transient_social_networks.pdf

Look at p.6 on line

A nice definition:

Compactly, in agent-based computational models a population of data structures representing individual agents is instantiated and permitted to interact.

One then looks for systematic regularities, often at the macro-level, to emerge, that is, arise from the local interactions of the agents.

The short-hand for this is that macroscopic regularities "grow" from the bottom-up. No equations governing the overall social structure are stipulated in multi-agent computational modeling, thus avoiding any aggregation or misspecification bias.

A nice definition (cont.):

Typically, the only equations present are those used by individual agents for decision-making.

Different agents may have different decision rules and different information; usually, no agents have global information, and the behavioral rules involve bounded computational capacities—the agents are "simple".

This relatively new methodology facilitates modeling agent heterogeneity, boundedly rational behavior, non-equilibrium dynamics, and spatial processes.

A particularly natural way to implement agent-based models is through so-called object-oriented programming.