A century after its introduction, the Lorenz curve has found a multitude of applications, some of them unrelated to its original purpose, the measurement of economic inequality. Fairly recently, a stochastic ordering based on the Lorenz curve – the Lorenz ordering – attracts increasing attention, mainly in applied probability and reliability theory.

Here we shall survey characterizations of statistical distributions in terms of the Lorenz curve and related inequality measures, notably the Gini coefficient, as well as results on the Lorenz ordering within parametric families of income distributions. Miscellaneous applications of the Lorenz ordering – sometimes in the form of the more restrictive majorization ordering – in economics and econometrics will be briefly discussed.