Lipschitz mappings

On pages 57 and 74 of the notes we mention the concept of a ***Lipschitz condition,*** which is meaningful for mappings of arbitrary metric spaces and lies between the notions of uniform continuity and isometry. Such conditions are important because they suffice to prove strong existence and uniqueness conditions for solutions to ordinary differential equations, but they also arise in several other contexts. Some general comments on functions satisfying such conditions (***Lipschitz functions***) appear on pages 48 – 49 of the online notes for the third course in the **205** sequence

http://math.ucr.edu/~res/math205C/lectnotes.pdf

and the Wikipedia reference**:**

http://en.wikipedia.org/wiki/Lipschitz_continuity

A few basic facts about Lipschitz fundtions are presented on pages 6 and 6 – 8 (respectively) of the following**:**

http://math.ucr.edu/~res/math205C/coursehw.pdf

http://math.ucr.edu/~res/math205C/solutions2.pdf

More detailed discussions of Lipschitz functions and related topics involving metric spaces are given in the online notes

http://www.math.jyu.fi/research/reports/rep100.pdf

and the following advanced texts**:**

> **D. Burago, Y. Burago and S. Ivanov.** A Course in Metric Geometry: Graduate Studies in Mathematics Vol. 33**.** *American Mathematical Society, Providence, RI,* 2001**.**

> **J. Heinonen.** Lectures on Analysis on Metric Spaces (Universitext). *Springer – Verlag, New York,* 2001**.**