1064-37-16   **Jiu Ding*** (`jiudin@gmail.com`), Department of Mathematics, 118 College Dr., Box 5045, Hattiesburg, MS 39406. *Incorporating Dynamical Geometry and Fractals into Undergraduate Mathematics Education.* Preliminary report.

In high school geometry, students study the Euclidean geometry in a traditional way. Recently the author and his co-authors published a series of papers related to dynamical geometry and fractals, in which various modern concepts of discrete dynamical systems and chaos are incorporated with the classic plane geometry. Some undergraduate-level mathematics, such as linear algebra and calculus, are used together with a basic theory of nonnegative matrices and iterated function systems for the study of iterated triangles and polygons, and their eventual regular and chaotic behaviors.

In this talk, some practice and proposal on teaching dynamical geometry and related modern mathematics topics at the undergraduate level will be presented. The study of modern mathematical ideas and methods in the undergraduate education will enable upper-level students to gain more insights about intrinsic relationships of seemingly different mathematical subjects and enjoy marvelous applications of one area into another one, and thus make them well-prepared in the 21st century for their future professional development. (Received July 26, 2010)