

1116-VM-2102 **Long Le*** (longl@uca.edu), University of Central Arkansas, 201 Donaghey ave., Conway, AR 72035. *An epidemic model with exposed and treatment components*. Preliminary report.

Epidemics have had great effects throughout the course of human history. To be able to describe and predict the behavior of an epidemic is essential to prevent its spreading and to provide understanding of underlying mechanisms of a disease. One of the earliest models that successfully described and predicted behaviors of an epidemic is called the SIR model, in which the population is divided in three groups: susceptible (S), infected (I), and recovered(R). In this paper, a model in which exposed and treated groups are considered. An endemic equilibrium is found and its stability is analyzed. (Received September 21, 2015)